

*Ch Allain*

L'hydrologie et les courants  
du détroit de Gibraltar  
pendant l'été de 1959

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Résultats des observations

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*allain 1964*



L'hydrologie et les courants  
du détroit de Gibraltar pendant l'été de 1959  
(Campagnes du "Président-Théodore-Tissier")

par Ch. ALLAIN

Résultats des observations  
de l'été 1959 (1)

Note explicative.

La lettre L précédant chaque numéro de station se rapporte à l'année 1959. On l'a retranchée dans le texte. Par contre, la lettre M de l'année 1960 a été conservée.

La plupart des stations ont fait l'objet d'observations répétées toutes les 3 heures environ. Pour les différencier le numéro de station est suivi des indications H<sub>1</sub>, H<sub>2</sub>, H<sub>3</sub>, H<sub>4</sub>, etc... On situera chacune de ces mesures dans le cycle de marée correspondant, en comparant les heures d'observations à celles des pleines mers, indiquées dans le tableau 1 du texte.

Les profondeurs standard, interpolées, sont indiquées entre parenthèses.

Dans certains cas, une ou deux bouteilles ont été immergées à proximité du fond au début de la station. Les heures d'observations sont alors précédées du chiffre 1) pour cette filière profonde 2) pour la filière principale filée en second lieu.

| Station<br>date<br>heure | Prof.<br>(m)                        | Temp.<br>(°C) | Salin.<br>‰ | St    | O <sup>2</sup><br>cc/L | Station<br>date<br>heure | Prof.<br>(m)  | Temp.<br>(°C) | Salin.<br>‰ | St    | O <sup>2</sup><br>cc/L |
|--------------------------|-------------------------------------|---------------|-------------|-------|------------------------|--------------------------|---------------|---------------|-------------|-------|------------------------|
| L 115                    | (au mouillage)                      |               |             |       |                        | H <sub>3</sub>           | même position |               |             |       |                        |
| H <sub>1</sub>           | Lat. : 35°51'42 N Long. : 5°41'02 O |               |             |       |                        | 1 VI                     |               |               |             |       |                        |
|                          | sonde : 56 m                        |               |             |       |                        | 19h35                    | 5             | 17.92         | 36.26       | 26.27 | 5.98                   |
| 1 VI                     |                                     |               |             |       |                        |                          | 7             | 17.24         | 36.18       | 26.38 | 5.98                   |
| 14h15                    | 5                                   | 17°34         | 36.26       | 26.41 | 5.80                   |                          | (10)          | 17.26         | 36.18       | 26.37 | 5.96                   |
|                          | 10                                  | 17°15         | 36.17       | 26.39 | 5.78                   |                          | (20)          | 17.34         | 36.17       | 26.35 | 5.89                   |
|                          | (20)                                | 17°15         | 36.17       | 26.39 | 5.90                   |                          |               |               |             |       |                        |
|                          | 25                                  | 17°15         | 36.17       | 26.39 | 5.96                   | H <sub>4</sub>           | même position |               |             |       |                        |
|                          | (30)                                | 16°89         | 36.19       | 26.47 | 5.95                   | 1 VI                     |               |               |             |       |                        |
|                          | (50)                                | 15°86         | 36.26       | 26.77 | 5.92                   | 22h50                    | 5             | 17.87         | 36.24       | 26.27 | 5.94                   |
|                          | 52                                  | 15°75         | 36.27       | 26.80 | 5.92                   |                          | 10            | 17.89         | 36.24       | 26.26 | 5.94                   |
| H <sub>2</sub>           | même position                       |               |             |       |                        |                          | (20)          | 17.68         | 36.23       | 26.31 | 5.92                   |
| 1 VI                     |                                     |               |             |       |                        |                          | 25            | 17.59         | 36.23       | 26.33 | 5.90                   |
| 16h30                    | 5                                   | 18.29         | 36.28       | 26.20 | 6 00                   |                          | (30)          | 16.98         | 36.41       | 26.60 | 5.76                   |
|                          | (10)                                | 18.15         | 36.23       | 26.20 | 5 98                   |                          | (50)          | 14.49         | 37.11       | 27.70 | 5.20                   |
|                          | (20)                                | 17.86         | 36.15       | 26.20 | 5 93                   |                          | 54            | 13.99         | 37.25       | 27.94 | 5.08                   |
|                          | 22                                  | 17.80         | 36.13       | 26.20 | 5 92                   | H <sub>5</sub>           | même position |               |             |       |                        |
|                          | (25)                                | 17.67         | 36.13       | 26.24 | 5.92                   | 2 VI                     |               |               |             |       |                        |
|                          | (30)                                | 17.46         | 36.14       | 26.30 | 5.92                   | 01h52                    | 5             | 16.38         | 36.15       | 26.56 | 5.70                   |
|                          | 49                                  | 16.64         | 36.18       | 26.52 | 5.92                   |                          | 10            | 16.36         | 36.13       | 26.55 | 5.72                   |
|                          | (50)                                | 16.60         | 36.18       | 26.53 | 5.92                   |                          |               |               |             |       |                        |

(1) Annexe à la publication de CH. ALLAIN (1964) parue sous le même titre.- Rev. Trav. Inst. Pêches marit. T. 27 (1).



| Station<br>date<br>heure | Prof.<br>(m)                        | Temp.<br>(°C) | Salin.<br>‰ | 6t    | O <sup>2</sup><br>cc/L | Station<br>date<br>heure | Prof.<br>(m)                        | Temp.<br>(°C) | Salin.<br>‰ | 6t    | O <sup>2</sup><br>cc/L |
|--------------------------|-------------------------------------|---------------|-------------|-------|------------------------|--------------------------|-------------------------------------|---------------|-------------|-------|------------------------|
| L 115                    |                                     |               |             |       |                        | L 116                    |                                     |               |             |       |                        |
| H <sub>5</sub> suite     | (20)                                | 16.38         | 36.18       | 26.58 | 5.72                   | (suite)                  | (75)                                | 16.55         | 36.33       | 26.65 | 5.84                   |
|                          | 25                                  | 16.39         | 36.20       | 26.60 | 5.72                   |                          | 85                                  | 16.67         | 36.27       | 26.72 | 5.79                   |
|                          | (30)                                | 16.38         | 36.20       | 26.61 | 5.67                   |                          | (100)                               | 15.84         | 36.28       | 26.78 | 5.67                   |
|                          | 50                                  | 16.55         | 36.21       | 26.62 | 5.58                   |                          | 130                                 | 15.34         | 36.29       | 26.91 | 5.42                   |
| H <sub>6</sub>           | même position                       |               |             |       |                        | L 117                    | (au mouillage)                      |               |             |       |                        |
| 2 VI                     |                                     |               |             |       |                        |                          | Lat. : 36°02'0 N Long. : 5°42'45 0  |               |             |       |                        |
| 04h55                    | 5                                   | 17.84         | 36.13       | 26.20 | 6.03                   |                          | sonde : 26 m                        |               |             |       |                        |
|                          | 10                                  | 17.80         | 36.17       | 26.23 | 6.05                   | 2 VI                     |                                     |               |             |       |                        |
|                          | (20)                                | 17.80         | 36.15       | 26.21 | 6.04                   | 17h30                    | 5                                   | 17.64         | 36.17       | 26.27 | 6.35                   |
|                          | 25                                  | 17.80         | 36.14       | 26.21 | 6.03                   |                          | 10                                  | 17.11         | 36.35       | 26.54 | 6.10                   |
|                          | (30)                                | 17.50         | 36.29       | 26.33 | 5.95                   |                          | (20)                                | 16.32         | 36.35       | 26.72 | 5.99                   |
|                          | 50                                  | 16.26         | 36.41       | 26.79 | 5.62                   |                          | 23                                  | 16.07         | 36.35       | 26.78 | 5.94                   |
| H <sub>7</sub>           | même position                       |               |             |       |                        | L 118                    | (au mouillage)                      |               |             |       |                        |
| 2 VI                     |                                     |               |             |       |                        | H <sub>1</sub>           | Lat. : 35°59'48 N Long. : 5°43'17 0 |               |             |       |                        |
| 08h20                    | 5                                   | 16.57         | 36.24       | 26.58 | 5.84                   |                          | sonde : 52 m                        |               |             |       |                        |
|                          | 10                                  | 16.53         | 36.22       | 26.58 | 5.76                   | 2 VI                     |                                     |               |             |       |                        |
|                          | (20)                                | 16.00         | 36.22       | 26.70 | 5.72                   | 20h45                    | 5                                   | 18.11         | 36.37       | 26.32 | 6.10                   |
|                          | 25                                  | 15.74         | 36.22       | 26.76 | 5.70                   |                          | 10                                  | 17.29         | 36.27       | 26.43 | 6.19                   |
|                          | (30)                                | 15.72         | 36.23       | 26.77 | 5.68                   |                          | (20)                                | 14.85         | 37.25       | 27.00 | 5.70                   |
|                          | 50                                  | 15.64         | 36.26       | 26.81 | 5.62                   |                          | 25                                  | 13.72         | 37.62       | 27.29 | 5.45                   |
| H <sub>8</sub>           | même position                       |               |             |       |                        |                          | (30)                                | 13.59         | 37.70       | 28.37 | 5.39                   |
|                          |                                     |               |             |       |                        |                          | 50                                  | 13.08         | 38.04       | 28.71 | 5.16                   |
| 2 VI                     |                                     |               |             |       |                        | H <sub>2</sub>           | même position                       |               |             |       |                        |
| 11h00                    | 5                                   | 17.52         | 36.20       | 26.33 | 5.99                   |                          | sonde : 54 m                        |               |             |       |                        |
|                          | 10                                  | 17.33         | 36.19       | 26.37 | 5.99                   | 2 VI                     |                                     |               |             |       |                        |
|                          | (20)                                | 17.09         | 36.26       | 26.48 | 6.10                   | 23h45                    | 5                                   | 17.79         | 36.13       | 26.21 | 6.19                   |
|                          | 25                                  | 16.98         | 36.30       | 26.53 | 6.15                   |                          | 10                                  | 17.77         | 36.22       | 26.28 | 5.98                   |
|                          | (30)                                | 16.25         | 36.62       | 26.94 | 5.90                   |                          | (20)                                | 17.56         | 36.42       | 26.45 | 6.15                   |
|                          | 50                                  | 13.41         | 37.89       | 28.56 | 4.89                   |                          | 25                                  | 17.47         | 36.53       | 26.59 | 6.24                   |
| L 116                    | (au mouillage)                      |               |             |       |                        |                          | (30)                                | 17.20         | 36.54       | 26.66 | 6.20                   |
|                          |                                     |               |             |       |                        |                          | 50                                  | 16.05         | 36.56       | 26.96 | 6.04                   |
|                          | Lat. : 35°53'16 N Long. : 5°42'65 0 |               |             |       |                        | H <sub>3</sub>           | même position                       |               |             |       |                        |
|                          | sonde : 190/215 m                   |               |             |       |                        |                          | sonde : 56 m                        |               |             |       |                        |
| 2 VI                     |                                     |               |             |       |                        | 3 VI                     |                                     |               |             |       |                        |
| 16h00                    | 5                                   | 17.34         | 36.27       | 26.42 | 5.91                   | 02h30                    | 5                                   | 18.09         | 36.27       | 26.24 | 6.12                   |
|                          | 10                                  | 17.27         | 36.28       | 26.46 | 5.91                   |                          | 10                                  | 17.96         | 36.31       | 26.30 | 6.12                   |
|                          | 20                                  | 17.15         | 36.25       | 26.45 | 5.84                   |                          | (20)                                | 17.48         | 36.19       | 26.33 | 6.25                   |
|                          | (30)                                | 17.08         | 36.27       | 26.48 | 5.82                   |                          | 25                                  | 17.25         | 36.13       | 26.34 | 6.31                   |
|                          | 40                                  | 17.02         | 36.30       | 26.52 | 5.79                   |                          | (30)                                | 16.86         | 36.26       | 26.55 | 6.22                   |
|                          | (50)                                | 17.02         | 36.34       | 26.54 | 5.83                   |                          | 50                                  | 15.36         | 36.77       | 27.28 | 5.83                   |
|                          | 65                                  | 17.05         | 36.39       | 26.59 | 5.91                   |                          |                                     |               |             |       |                        |



| Station<br>date<br>heure | Prof.<br>(m)                                           | Temp.<br>(°C) | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L | Station<br>date<br>heure | Prof.<br>(m)                   | Temp.<br>(°C) | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L |
|--------------------------|--------------------------------------------------------|---------------|-------------|------------|--------------------|--------------------------|--------------------------------|---------------|-------------|------------|--------------------|
| H <sub>4</sub>           | même position<br>sonde : 55 m                          |               |             |            |                    | H <sub>2</sub>           | même position<br>sonde : 106 m |               |             |            |                    |
| 3 VI<br>05h30            | 5                                                      | 18.28         | 36.43       | 26.31      | 6.08               | 4 VI<br>00h15            | 5                              | 18.37         | 36.43       | 26.29      | 5.92               |
|                          | 10                                                     | 18.29         | 36.40       | 26.29      | 6.04               |                          | 10                             | 18.42         | 36.43       | 26.28      | 5.80               |
|                          | (20)                                                   | 17.98         | 36.37       | 26.35      | 6.05               |                          | (20)                           | 17.80         | 36.40       | 26.38      | 5.93               |
|                          | 25                                                     | 17.82         | 36.36       | 26.38      | 6.06               |                          | 25                             | 17.49         | 36.39       | 26.48      | 6.00               |
|                          | (30)                                                   | 17.65         | 36.36       | 26.42      | 6.06               |                          | (30)                           | 17.28         | 36.38       | 26.53      | 6.07               |
|                          | 50                                                     | 16.96         | 36.36       | 26.59      | 6.06               |                          | 50                             | 16.40         | 36.37       | 26.73      | 6.33               |
|                          |                                                        |               |             |            |                    |                          | 75                             | 15.32         | 36.76       | 27.28      | 5.74               |
|                          |                                                        |               |             |            |                    |                          | 95                             | 13.11         | 38.19       | 28.86      | 4.95               |
| H <sub>5</sub>           | même position<br>sonde : 53 m                          |               |             |            |                    | H <sub>3</sub>           | même position<br>sonde : 130 m |               |             |            |                    |
| 3 VI<br>08h45            | 5                                                      | 17.80         | 36.41       | 26.42      | 6.07               | 4 VI<br>03h20            | 5                              | 18.61         | 36.31       | 26.13      | 5.96               |
|                          | 10                                                     | 17.33         | 36.37       | 26.51      | 6.15               |                          | 10                             | 18.61         | 36.37       | 26.19      | 6.08               |
|                          | (20)                                                   | 15.10         | 37.20       | 27.70      | 5.67               |                          | (20)                           | 18.30         | 36.37       | 26.27      | 6.03               |
|                          | 25                                                     | 13.90         | 37.66       | 28.29      | 5.43               |                          | 25                             | 18.16         | 36.37       | 26.31      | 6.00               |
|                          | (30)                                                   | 13.75         | 37.76       | 28.41      | 5.40               |                          | (30)                           | 17.65         | 36.34       | 26.40      | 5.98               |
|                          | 50                                                     | 13.14         | 38.19       | 28.85      | 5.25               |                          | 50                             | 15.47         | 36.19       | 26.80      | 5.92               |
|                          |                                                        |               |             |            |                    |                          | 70                             | 15.48         | 36.19       | 26.80      | 4.90               |
|                          |                                                        |               |             |            |                    |                          | (75)                           | 15.22         | 36.17       | 26.85      | 4.77               |
|                          |                                                        |               |             |            |                    |                          | 80                             | 14.97         | 36.16       | 26.89      | 4.67               |
|                          |                                                        |               |             |            |                    |                          | 90                             | 14.97         | 36.23       | 26.93      | 4.69               |
| L 119                    | (au mouillage)                                         |               |             |            |                    |                          |                                |               |             |            |                    |
|                          | Lat. : 35°55'7 N Long. : 5°45'2 0<br>sonde : 275/300 m |               |             |            |                    |                          |                                |               |             |            |                    |
| 3 VI<br>13h40            | 5                                                      | 18.82         | 36.27       | 26.05      | 5.94               | H <sub>4</sub>           | même position<br>sonde : 100 m |               |             |            |                    |
|                          | 10                                                     | 18.85         | 36.29       | 26.06      | 6.02               | 4 VI<br>06h20            | 5                              | 18.19         | 36.21       | 26.18      | 6.15               |
|                          | 20                                                     | 18.57         | 36.32       | 26.15      | 6.07               |                          | 10                             | 18.02         | 36.30       | 26.28      | 6.25               |
|                          | (30)                                                   | 18.46         | 36.32       | 26.18      | 6.04               |                          | (20)                           | 17.12         | 36.33       | 26.52      | 6.31               |
|                          | 40                                                     | 18.36         | 36.32       | 26.21      | 6.00               |                          | 25                             | 16.64         | 36.34       | 26.65      | 6.34               |
|                          | (50)                                                   | 17.80         | 36.35       | 26.36      | 5.97               |                          | (30)                           | 16.40         | 36.32       | 26.69      | 6.23               |
|                          | 70                                                     | 16.71         | 36.41       | 26.69      | 5.92               |                          | 40                             | 15.87         | 36.27       | 26.77      | 5.99               |
|                          | (100)                                                  | 16.27         | 36.38       | 26.77      | 5.89               |                          | (50)                           | 15.56         | 36.25       | 26.82      | 5.85               |
|                          | 110                                                    | 16.13         | 36.37       | 26.80      | 5.88               |                          | 70                             | 14.96         | 36.18       | 26.91      | 5.58               |
|                          | 150                                                    | 15.63         | 36.30       | 26.86      | 5.60               |                          | (75)                           | 14.80         | 36.30       | 27.04      | 5.53               |
|                          | 200                                                    | 14.05         | 37.48       | 28.11      | 5.20               |                          | 85                             | 14.48         | 36.54       | 27.29      | 5.45               |
|                          |                                                        |               |             |            |                    |                          |                                |               |             |            |                    |
| L 120                    | (au mouillage)                                         |               |             |            |                    |                          |                                |               |             |            |                    |
| H <sub>1</sub>           | Lat. : 35°58'1 N Long. : 5°46'5 0<br>sonde : 110 m     |               |             |            |                    | H <sub>5</sub>           | même position<br>sonde : 112 m |               |             |            |                    |
| 3 VI<br>21h00            | 5                                                      | 18.50         | 36.44       | 26.27      | 6.00               | 4 VI<br>09h50            | 5                              | 18.29         | 36.16       | 26.10      | 6.19               |
|                          | 10                                                     | 18.53         | 36.42       | 26.24      | 6.00               |                          | 10                             | 18.26         | 36.32       | 26.24      | 6.16               |
|                          | (20)                                                   | 18.46         | 36.31       | 26.17      | 5.96               |                          | (20)                           | 17.66         | 36.29       | 26.38      | 6.18               |
|                          | 25                                                     | 18.44         | 36.25       | 26.13      | 5.94               |                          | 25                             | 17.37         | 36.28       | 26.45      | 6.19               |
|                          | (30)                                                   | 17.90         | 36.27       | 26.28      | 5.91               |                          | (30)                           | 16.98         | 36.29       | 26.54      | 6.17               |
|                          | 50                                                     | 15.66         | 36.35       | 26.88      | 5.80               |                          | 40                             | 16.17         | 36.32       | 26.74      | 6.13               |
|                          | 75                                                     | 15.03         | 36.60       | 27.22      | 5.60               |                          | (50)                           | 15.81         | 36.37       | 26.86      | 6.03               |
|                          | 95                                                     | 13.14         | 36.39       | 27.46      | 5.09               |                          |                                |               |             |            |                    |



| Station<br>date<br>heure | Prof.<br>(m)          | Temp.<br>(°C)     | Salin.<br>‰ | σ <sub>t</sub> | O <sub>2</sub><br>cc/L | Station<br>date<br>heure | Prof.<br>(m) | Temp.<br>(°C) | Salin.<br>‰ | σ <sub>t</sub> | O <sub>2</sub><br>cc/L |
|--------------------------|-----------------------|-------------------|-------------|----------------|------------------------|--------------------------|--------------|---------------|-------------|----------------|------------------------|
| L 120                    |                       |                   |             |                |                        | H <sub>3</sub>           |              | même position |             |                |                        |
| H <sub>5</sub> suite     | 70                    | 15.08             | 36.46       | 27.10          | 5.72                   |                          |              | sonde : 332 m |             |                |                        |
|                          | (75)                  | 14.60             | 36.86       | 27.51          | 5.69                   | 5 VI                     |              |               |             |                |                        |
|                          | 90                    | 13.10             | 38.14       | 28.82          | 5.00                   | 01h20                    | 5            | 17.29         | 36.20       | 26.39          | 5.97                   |
|                          |                       |                   |             |                |                        |                          | (10)         | 17.16         | 36.21       | 26.42          | 5.92                   |
| L 121                    |                       |                   |             |                |                        |                          | (20)         | 16.92         | 36.24       | 26.50          | 5.81                   |
| (au mouillage)           |                       |                   |             |                |                        |                          | 25           | 16.81         | 36.26       | 26.54          | 5.76                   |
| H <sub>1</sub>           | Lat. : 35°54'9 N      | Long. : 5°44'11 O |             |                |                        |                          | (30)         | 16.76         | 36.24       | 26.54          | 5.79                   |
|                          | sonde : 295 m         |                   |             |                |                        |                          | 50           | 16.55         | 36.17       | 26.54          | 5.91                   |
| 4 VI                     |                       |                   |             |                |                        |                          | 70           | 15.97         | 36.35       | 26.80          | 5.83                   |
| 18h55                    | 5                     | 18.73             | 36.61       | 26.34          | 5.91                   |                          | (75)         | 15.72         | 36.39       | 26.88          | 5.75                   |
|                          | (10)                  | 18.52             | 36.52       | 26.33          | 5.97                   |                          | 90           | 15.06         | 36.50       | 27.13          | 5.49                   |
|                          | (20)                  | 18.10             | 36.35       | 26.30          | 6.10                   |                          | (100)        | 14.73         | 36.83       | 27.44          | 5.42                   |
|                          | 25                    | 17.90             | 36.27       | 26.29          | 6.17                   |                          | 130          | 13.74         | 37.74       | 28.37          | 5.22                   |
|                          | (30)                  | 17.48             | 36.23       | 26.36          | 6.13                   |                          | 170          | 12.96         | 38.50       | 29.14          | 4.62                   |
|                          | 40                    | 16.56             | 36.15       | 26.52          | 6.05                   |                          | 185          | 12.84         | 38.53       | 29.18          | 4.69                   |
|                          | (50)                  | 16.32             | 36.20       | 26.61          | 6.08                   |                          | (200)        | 12.86         | 38.54       | 29.18          | 4.69                   |
|                          | 65                    | 15.95             | 36.27       | 26.75          | 6.14                   |                          | 210          | 12.87         | 38.54       | 29.18          | 4.69                   |
|                          | (75)                  | 15.32             | 36.28       | 26.90          | 5.94                   |                          |              |               |             |                |                        |
|                          | 80                    | 15.02             | 36.28       | 26.97          | 5.84                   |                          |              |               |             |                |                        |
|                          | 100                   | 14.04             | 36.25       | 27.16          | 5.37                   | H <sub>4</sub>           |              | même position |             |                |                        |
|                          | 130                   | 14.43             | 36.07       | 26.94          | 5.52                   |                          |              | sonde : 300 m |             |                |                        |
|                          | 160                   | 13.88             | 37.43       | 28.11          | 5.27                   | 5 VI                     |              |               |             |                |                        |
|                          | 180                   | 13.52             | 37.81       | 28.47          | 5.01                   | 04h15                    | 5            | 18.59         | 36.40       | 26.22          | 5.09                   |
|                          |                       |                   |             |                |                        |                          | (10)         | 18.56         | 36.40       | 26.23          | 6.06                   |
|                          |                       |                   |             |                |                        |                          | (20)         | 18.50         | 36.40       | 26.24          | 6.00                   |
| H <sub>2</sub>           |                       |                   |             |                |                        |                          | 30           | 18.45         | 36.40       | 26.25          | 5.94                   |
|                          | même position         |                   |             |                |                        |                          | (50)         | 18.27         | 36.35       | 26.25          | 5.96                   |
|                          | sonde : 325/338/342 m |                   |             |                |                        |                          | 65           | 18.14         | 36.31       | 26.25          | 5.98                   |
| 4 VI                     |                       |                   |             |                |                        |                          | (75)         | 17.86         | 36.33       | 26.32          | 5.96                   |
| 21h50                    | 5                     | 17.26             | 36.20       | 26.39          | 6.05                   |                          | 85           | 17.58         | 36.35       | 26.42          | 6.13                   |
|                          | (10)                  | 17.12             | 36.21       | 26.42          | 6.02                   |                          | (100)        | 16.99         | 36.32       | 26.51          | 6.09                   |
|                          | (20)                  | 16.90             | 36.22       | 26.50          | 5.92                   |                          | 120          | 16.19         | 36.27       | 26.70          | 6.03                   |
|                          | 25                    | 16.78             | 36.23       | 26.53          | 5.87                   |                          | 170          | 14.65         | 36.15       | 26.95          | 5.41                   |
|                          | (30)                  | 16.60             | 36.23       | 26.58          | 5.84                   |                          | 190          | 13.60         | 37.88       | 28.51          | 4.61                   |
|                          | (50)                  | 15.86             | 36.23       | 26.74          | 5.73                   |                          | (200)        | 13.44         | 38.03       | 28.66          | 4.63                   |
|                          | 60                    | 15.49             | 36.23       | 26.83          | 5.67                   |                          | 225          | 13.01         | 38.40       | 29.04          | 4.67                   |
|                          | (75)                  | 14.90             | 36.47       | 27.14          | 5.43                   |                          | 280          | 12.89         | 38.48       | 29.13          | 4.93                   |
|                          | 85                    | 14.53             | 36.63       | 27.35          | 5.27                   |                          |              |               |             |                |                        |
|                          | (100)                 | 14.22             | 36.88       | 27.56          | 5.29                   |                          |              |               |             |                |                        |
|                          | 120                   | 14.28             | 37.21       | 27.85          | 5.42                   | H <sub>5</sub>           |              | même position |             |                |                        |
|                          | 170                   | 13.60             | 37.90       | 28.52          | 5.14                   |                          |              | sonde : 288 m |             |                |                        |
|                          | 200                   | 13.04             | 38.23       | 28.91          | 4.69                   | 5 VI                     |              |               |             |                |                        |
|                          | 240                   | 12.96             | 38.34       | 29.02          | 4.69                   | 07h00                    | 5            | 18.40         | 36.29       | 26.18          | 6.04                   |
|                          | 280                   | 12.88             | 38.52       | 29.17          | 4.56                   |                          | (10)         | 18.32         | 36.30       | 26.21          | 6.04                   |
|                          | 320                   | 12.95             | ?           | ?              | ?                      |                          | (20)         | 18.28         | 36.33       | 26.26          | 6.05                   |



| Station<br>date<br>heure | Prof.<br>(m)                       | Temp.<br>(°C) | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L | Station<br>date<br>heure | Prof.<br>(m)                       | Temp.<br>(°C) | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L |
|--------------------------|------------------------------------|---------------|-------------|------------|--------------------|--------------------------|------------------------------------|---------------|-------------|------------|--------------------|
| L 121                    |                                    |               |             |            |                    | H <sub>3</sub>           | même position<br>sonde : 280/340 m |               |             |            |                    |
| H <sub>5</sub> suite     | 25                                 | 18.10         | 36.34       | 26.29      | 6.05               | 14 VI                    |                                    |               |             |            |                    |
|                          | (30)                               | 17.74         | 36.34       | 26.37      | 6.10               | 01h55                    | 5                                  | 15.02         | 36.23       | 26.93      | 5.74               |
|                          | 50                                 | 16.39         | 36.33       | 26.70      | 6.31               |                          | (10)                               | 15.02         | 36.22       | 26.92      | 5.71               |
|                          | 75                                 | 15.65         | 36.31       | 26.85      | 5.86               |                          | (20)                               | 15.02         | 36.20       | 26.91      | 5.66               |
|                          | 100                                | 15.03         | 36.20       | 26.91      | 5.59               |                          | 25                                 | 15.03         | 36.19       | 26.90      | 5.63               |
|                          | 150                                | 14.13         | 36.45       | 27.30      | 5.33               |                          | (30)                               | 15.04         | 36.18       | 26.89      | 5.65               |
|                          | 200                                | 13.64         | 37.82       | 28.46      | 5.07               |                          | 50                                 | 15.05         | 36.16       | 26.87      | 5.74               |
|                          | 250                                | 12.97         | 38.49       | 29.13      | 4.65               |                          | (75)                               | 14.52         | 36.03       | 26.89      | 5.53               |
|                          | 280                                | 12.88         | 38.47       | 29.13      | 4.61               |                          | 80                                 | 14.41         | 36.00       | 26.90      | 5.49               |
|                          |                                    |               |             |            |                    |                          | (100)                              | 14.06         | 36.05       | 27.01      | 5.25               |
| L 139                    | (au mouillage)                     |               |             |            |                    |                          | 110                                | 13.87         | 36.08       | 27.06      | 5.12               |
| H <sub>1</sub>           | Lat. : 35°53'3 N Long. : 5°38'55 O |               |             |            |                    |                          | 160                                | 13.86         | 37.04       | 27.82      | 5.28               |
|                          | sonde : 420 m                      |               |             |            |                    |                          | 200                                | 13.16         | 38.14       | 28.81      | 4.82               |
| 13 VI                    |                                    |               |             |            |                    |                          | 250                                | 13.01         | 38.39       | 28.94      | 4.82               |
| 19h20                    | 5                                  | 15.46         | 36.33       | 26.91      | 5.92               | H <sub>4</sub>           | (en dérive)                        |               |             |            |                    |
|                          | (10)                               | 15.45         | 36.32       | 26.91      | 5.91               |                          | Lat. : 35°54'25 N Long. : 5°37'2 O |               |             |            |                    |
|                          | (20)                               | 15.43         | 36.31       | 26.90      | 5.88               |                          | sonde : 420/610 m                  |               |             |            |                    |
|                          | 25                                 | 15.42         | 36.30       | 26.90      | 5.86               | 14 VI                    |                                    |               |             |            |                    |
|                          | (30)                               | 15.37         | 36.27       | 26.91      | 5.80               | 05h20                    | 5                                  | 15.57         | 36.20       | 26.79      | 5.90               |
|                          | 50                                 | 14.65         | 36.17       | 26.97      | 5.59               |                          | (10)                               | 15.52         | 36.19       | 26.79      | 5.88               |
|                          | 70                                 | 14.25         | 36.03       | 26.95      | 5.39               |                          | (20)                               | 15.42         | 36.15       | 26.78      | 5.84               |
|                          | (75)                               | 14.27         | 36.07       | 26.98      | 5.39               |                          | 25                                 | 15.38         | 36.14       | 26.78      | 5.82               |
|                          | 100                                | 14.37         | 36.30       | 27.13      | 5.39               |                          | (30)                               | 15.20         | 36.12       | 26.81      | 5.73               |
|                          | 200                                | 12.97         | 38.39       | 29.04      | 4.82               |                          | 50                                 | 14.42         | 36.05       | 26.92      | 5.37               |
|                          | 250                                | 12.91         | 38.48       | 29.12      | 4.66               |                          | 75                                 | 14.02         | 36.59       | 27.43      | 5.37               |
|                          | 280                                | 12.92         | 38.37       | 29.03      | 4.66               |                          | 100                                | 14.22         | 36.54       | 27.35      | 5.41               |
|                          | (300)                              | 12.93         | 38.32       | 28.96      | 4.66               |                          | 150                                | 13.47         | 37.64       | 28.36      | 5.41               |
|                          | 310                                | 12.93         | 38.23       | 28.93      | 4.66               |                          | 200                                | 13.43         | 37.50       | 28.25      | 5.50               |
|                          | 370                                | 12.93         | 38.56       | 29.18      | 4.62               |                          | 270                                | 13.41         | 37.61       | 28.34      | 4.99               |
|                          |                                    |               |             |            |                    |                          | (300)                              | 13.22         | 38.03       | 28.71      | 4.93               |
| H <sub>2</sub>           | même position                      |               |             |            |                    |                          | 320                                | 13.09         | 38.30       | 28.95      | 4.89               |
|                          | sonde : 435 m                      |               |             |            |                    |                          | 370                                | 12.94         | 38.35       | 29.02      | 4.62               |
| 13 VI                    |                                    |               |             |            |                    |                          |                                    |               |             |            |                    |
| 23h20                    | 5                                  | 15.32         | 36.20       | 26.85      | 5.85               | L 140                    | (en dérive)                        |               |             |            |                    |
|                          | (10)                               | 15.32         | 36.21       | 26.86      | 5.83               |                          |                                    |               |             |            |                    |
|                          | (20)                               | 15.33         | 36.25       | 26.87      | 5.81               | H <sub>1</sub>           | Lat. : 35°55'4 N Long. : 5°37'85 O |               |             |            |                    |
|                          | 25                                 | 15.34         | 36.26       | 26.88      | 5.79               |                          | sonde : 640/705 m                  |               |             |            |                    |
|                          | (30)                               | 15.33         | 36.26       | 26.89      | 5.84               | 14 VI                    |                                    |               |             |            |                    |
|                          | 50                                 | 15.27         | 36.25       | 26.90      | 6.04               | 23h30                    | 5                                  | 15.57         | 36.26       | 26.83      | 5.86               |
|                          | 75                                 | 15.27         | 36.27       | 26.91      | 6.02               |                          | (10)                               | 15.62         | 36.25       | 26.81      | 5.86               |
|                          | 100                                | 14.94         | 36.18       | 26.91      | 6.02               |                          | 15                                 | 15.68         | 36.24       | 26.79      | 5.86               |
|                          | 150                                | 14.09         | 36.56       | 27.39      | 5.32               |                          | (20)                               | 15.62         | 36.26       | 26.82      | 5.89               |
|                          | 200                                | 14.19         | 36.88       | 27.61      | 5.55               |                          | 30                                 | 15.55         | 36.30       | 26.87      | 5.94               |
|                          | 260                                | 13.07         | 36.33       | 27.43      | 4.74               |                          | 50                                 | 15.45         | 36.14       | 26.77      | 5.78               |
|                          | 300                                | 12.94         | 38.38       | 29.04      | 4.74               |                          | 75                                 | 14.74         | 36.23       | 27.00      | 5.54               |
|                          | 350                                | 12.90         | 38.51       | 29.15      | 4.62               |                          | (100)                              | 14.54         | 36.52       | 27.26      | 5.49               |



| Station<br>date<br>heure | Prof.<br>(m)                       | Temp.<br>(°C) | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L | Station<br>date<br>heure | Prof.<br>(m)                       | Temp.<br>(°C) | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L |
|--------------------------|------------------------------------|---------------|-------------|------------|--------------------|--------------------------|------------------------------------|---------------|-------------|------------|--------------------|
| L 140                    |                                    |               |             |            |                    | L 141                    | (en dérive)                        |               |             |            |                    |
| H <sub>1</sub> suite     | 170                                | 13.98         | 37.33       | 28.01      | 5.35               | H <sub>1</sub>           | Lat. : 35°57'9 N Long. : 5°37'15 O |               |             |            |                    |
|                          | (200)                              | 13.62         | 37.70       | 28.38      | 5.17               |                          | sonde : 440/450 m                  |               |             |            |                    |
|                          | 250                                | 13.01         | 38.31       | 28.97      | 4.86               | 15 VI                    |                                    |               |             |            |                    |
|                          | (300)                              | 12.98         | 38.41       | 29.06      | 4.82               | 20h00                    |                                    |               |             |            |                    |
|                          | 320                                | 12.95         | 38.46       | 29.10      | 4.80               |                          | 5                                  | 16.97         | 36.27       | 26.51      | 5.78               |
|                          | 400                                | 12.92         | 38.47       | 29.11      | 4.56               |                          | (10)                               | 16.62         | 36.27       | 26.59      | 5.71               |
|                          | 470                                | 12.93         | 38.54       | 29.16      | 4.56               |                          | (20)                               | 15.95         | 36.27       | 26.75      | 5.58               |
|                          |                                    |               |             |            |                    |                          | 25                                 | 15.61         | 36.27       | 26.83      | 5.51               |
|                          |                                    |               |             |            |                    |                          | (30)                               | 15.31         | 36.41       | 27.10      | 5.42               |
| H <sub>2</sub>           | Lat. : 35°56'0 N Long. : 5°38'15 O |               |             |            |                    |                          | 50                                 | 14.07         | 37.01       | 28.21      | 5.06               |
|                          | sonde : 670 m                      |               |             |            |                    |                          | 75                                 | 13.63         | 37.85       | 28.49      | 4.95               |
| 15 VI                    |                                    |               |             |            |                    |                          | 100                                | 13.27         | 36.57       | 27.58      | 5.10               |
| 02h30                    | 5                                  | 16.66         | 36.25       | 26.57      | 6.19               |                          | 150                                | 13.16         | 36.38       | 27.45      | 4.80               |
|                          | (10)                               | 16.60         | 36.19       | 26.54      | 6.13               |                          | 200                                | 13.03         | 38.46       | 29.09      | 4.61               |
|                          | 15                                 | 16.53         | 36.13       | 26.51      | 6.07               |                          | 250                                | 12.94         | 38.46       | 29.11      | 4.38               |
|                          | (20)                               | 16.48         | 36.16       | 26.55      | 6.07               |                          | 300                                | 12.94         | 38.48       | 29.12      | 4.38               |
|                          | (30)                               | 16.37         | 36.23       | 26.62      | 6.07               |                          | 380                                | 12.89         | 38.53       | 29.16      | 4.38               |
|                          | 40                                 | 16.27         | 36.30       | 26.70      | 6.07               |                          |                                    |               |             |            |                    |
|                          | (50)                               | 15.86         | 36.30       | 26.79      | 5.92               | H <sub>2</sub>           | Lat. : 35°57'9 N Long. : 5°37'35 O |               |             |            |                    |
|                          | 60                                 | 15.46         | 36.30       | 26.89      | 5.76               |                          | sonde : 450/520 m                  |               |             |            |                    |
|                          | (75)                               | 15.14         | 36.22       | 26.90      | 5.61               |                          |                                    |               |             |            |                    |
|                          | 90                                 | 14.83         | 36.13       | 26.90      | 5.46               | 15 VI                    |                                    |               |             |            |                    |
|                          | (100)                              | 14.68         | 36.31       | 27.08      | 5.43               | 00h15                    |                                    |               |             |            |                    |
|                          | 170                                | 13.63         | 37.62       | 28.31      | 5.17               |                          | 5                                  | 17.10         | 36.42       | 26.60      | 5.79               |
|                          | (200)                              | 13.44         | 37.85       | 28.53      | 5.11               |                          | (10)                               | 17.10         | 36.41       | 26.59      | 5.79               |
|                          | 260                                | 13.02         | 38.32       | 28.98      | 4.97               |                          | (20)                               | 17.09         | 36.38       | 26.57      | 5.78               |
|                          | (300)                              | 13.00         | 38.38       | 29.04      | 4.77               |                          | 25                                 | 17.09         | 36.36       | 26.56      | 5.78               |
|                          | 350                                | 12.98         | 38.47       | 29.11      | 4.52               |                          | (30)                               | 17.09         | 36.37       | 26.57      | 5.77               |
|                          | (400)                              | 12.94         | 38.48       | 29.12      | 4.52               |                          | 50                                 | 17.07         | 36.38       | 26.58      | 5.74               |
|                          | 430                                | 12.92         | 38.48       | 29.12      | 4.52               |                          | 75                                 | 16.28         | 36.26       | 26.66      | 5.59               |
|                          | 500                                | 12.93         | 38.47       | 29.12      | 4.58               |                          | (100)                              | 15.54         | 36.32       | 26.88      | 5.45               |
|                          |                                    |               |             |            |                    |                          | 140                                | 14.30         | 36.41       | 27.23      | 5.21               |
| H <sub>3</sub>           | Lat. : 35°55'7 N Long. : 5°38'0 O  |               |             |            |                    |                          | (150)                              | 14.20         | 36.44       | 27.51      | 4.91               |
|                          | sonde : 660/680 m                  |               |             |            |                    |                          | 180                                | 13.95         | 37.74       | 28.33      | 4.02               |
| 15 VI                    |                                    |               |             |            |                    |                          | (200)                              | 13.95         | 37.86       | 28.43      | 4.40               |
| 05h30                    | 5                                  | 16.56         | 36.35       | 26.67      | 6.07               |                          | 225                                | 13.95         | 38.03       | 28.56      | 4.91               |
|                          | (10)                               | 16.44         | 36.33       | 26.68      | 6.04               |                          | 250                                |               | 38.39       |            | 4.49               |
|                          | (20)                               | 16.20         | 36.28       | 26.71      | 5.97               |                          | 280                                | 12.99         | 38.36       | 29.02      | 4.49               |
|                          | 25                                 | 16.07         | 36.26       | 26.72      | 5.94               |                          | (300)                              | 12.96         | 38.41       | 29.07      | 4.49               |
|                          | (30)                               | 15.64         | 36.21       | 26.78      | 5.80               |                          | 320                                | 12.94         | 38.47       | 29.12      | 4.49               |
|                          | 50                                 | 13.89         | 36.01       | 27.02      | 5.21               | H <sub>3</sub>           | Lat. : 35°57'8 N Long. : 5°37'6 O  |               |             |            |                    |
|                          | 75                                 | 13.88         | 36.92       | 27.72      | 5.09               |                          | sonde : 500/560 m                  |               |             |            |                    |
|                          | 100                                | 13.43         | 37.91       | 28.57      | 5.21               | 16 VI                    |                                    |               |             |            |                    |
|                          | 200                                | 13.03         | 38.35       | 29.00      | 5.21               | 03h00                    |                                    |               |             |            |                    |
|                          | 300                                | 12.94         | 38.48       | 29.12      | 4.52               |                          | 5                                  | 17.05         | 36.18       | 26.43      | 5.79               |
|                          | 380                                | 12.93         | 38.58       | 29.20      | 4.56               |                          | (10)                               | 17.06         | 36.22       | 26.45      | 5.81               |
|                          | (400)                              | 12.92         | 38.57       | 29.20      | 4.57               |                          | (20)                               | 17.07         | 36.29       | 26.50      | 5.85               |
|                          | 450                                | 12.91         | 38.55       | 29.18      | 4.60               |                          | 25                                 | 17.08         | 36.33       | 26.53      | 5.87               |
|                          | (500)                              | 12.92         | 38.56       | 29.19      | 4.59               |                          | (30)                               | 16.84         | 36.31       | 26.57      | 5.79               |
|                          | 530                                | 12.92         | 38.56       | 29.19      | 4.56               |                          | 50                                 | 15.83         | 36.21       | 26.74      | 5.45               |
|                          |                                    |               |             |            |                    |                          | 75                                 | 14.77         | 36.13       | 26.91      | 5.30               |
|                          |                                    |               |             |            |                    |                          | 100                                | 14.81         | 36.20       | 26.96      | 5.15               |



| Station<br>date<br>heure | Prof.<br>(m)                      | Temp.<br>(°C) | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L | Station<br>date<br>heure | Prof.<br>(m)                      | Temp.<br>(°C) | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L |
|--------------------------|-----------------------------------|---------------|-------------|------------|--------------------|--------------------------|-----------------------------------|---------------|-------------|------------|--------------------|
| L 141                    |                                   |               |             |            |                    | H <sub>3</sub>           | Lat. : 35°51'2 N Long. : 5°37'9 0 |               |             |            | sonde : 52/53 m    |
| H <sub>3</sub> suite:    | 150                               | 13.69         | 37.56       | 28.25      | 4.88               | 17 VI                    |                                   |               |             |            |                    |
|                          | 200                               | 13.59         | 37.93       | 28.45      | 5.00               | 04h20                    | 5                                 | 15.96         | 36.29       | 26.77      | 5.74               |
|                          | 250                               | 13.42         | 37.94       | 28.60      | 4.86               |                          | 10                                | 15.85         | 36.33       | 26.82      | 5.51               |
|                          | 300                               | 13.41         | 38.13       | 28.75      | 4.94               |                          | (20)                              | 15.63         | 36.26       | 26.79      | 5.51               |
|                          | 380                               | 13.12         | 38.18       | 28.85      | 4.88               |                          | 25                                | 15.52         | 36.23       | 26.78      | 5.51               |
|                          |                                   |               |             |            |                    |                          | (30)                              | 15.52         | 36.26       | 26.81      | 5.50               |
| H <sub>4</sub>           | Lat. : 35°58'5 N Long. : 5°37'9 0 |               |             |            |                    |                          | 50                                | 15.52         | 36.36       | 26.93      | 5.47               |
|                          | sonde : 400/450 m                 |               |             |            |                    |                          |                                   |               |             |            |                    |
| 16 VI                    |                                   |               |             |            |                    | L 143                    | (au mouillage)                    |               |             |            |                    |
| 06h22                    | 5                                 | 17.26         | 36.35       | 26.51      | 5.69               |                          |                                   |               |             |            |                    |
|                          | (10)                              | 16.97         | 36.30       | 26.55      | 5.62               | H <sub>1</sub>           | Lat. : 35°59'7 N Long. : 5°37'4 0 |               |             |            |                    |
|                          | (20)                              | 16.36         | 36.21       | 26.62      | 5.48               |                          | sonde : 54 m                      |               |             |            |                    |
|                          | 25                                | 16.05         | 36.17       | 26.66      | 5.41               | 17 VI                    |                                   |               |             |            |                    |
|                          | (30)                              | 15.80         | 36.17       | 26.72      | 5.36               | 20h15                    | 5                                 | 17.43         | 36.40       | 26.51      | 5.76               |
|                          | 50                                | 14.74         | 36.20       | 26.98      | 5.15               |                          | 10                                | 17.38         | 36.29       | 26.43      | 5.97               |
|                          | 75                                | 13.88         | 36.91       | 27.70      | 4.97               |                          | (20)                              | 17.24         | 36.57       | 26.66      | 5.82               |
|                          | 100                               | 13.77         | 37.80       | 28.42      | 5.01               |                          | 25                                | 17.18         | 36.71       | 26.79      | 5.74               |
|                          | 150                               | 13.24         | 38.20       | 28.84      | 4.97               |                          | (30)                              | 16.70         | 36.84       | 27.00      | 5.42               |
|                          | 200                               | 13.01         | 38.46       | 29.09      | 4.72               |                          | 50                                | 14.73         | 37.38       | 27.68      | 5.20               |
|                          | 240                               | 12.98         | 38.46       | 29.10      | 4.44               |                          |                                   |               |             |            |                    |
|                          | 280                               | 12.98         | 38.57       | 29.17      | 4.38               | H <sub>2</sub>           | même position                     |               |             |            |                    |
|                          | (300)                             | 12.96         | 38.55       | 29.16      | 4.38               |                          | sonde : 60 m                      |               |             |            |                    |
|                          | 360                               | 12.94         | 38.51       | 29.14      | 4.38               | 17 VI                    |                                   |               |             |            |                    |
|                          |                                   |               |             |            |                    | 23h10                    | 5                                 | 17.18         | 36.41       | 26.58      | 5.74               |
| L 142                    | (au mouillage)                    |               |             |            |                    |                          | 10                                | 16.98         | 36.41       | 26.62      | 5.89               |
|                          |                                   |               |             |            |                    |                          | (20)                              | 16.51         | 36.68       | 26.89      | 5.69               |
| H <sub>1</sub>           | Lat. : 35°51'2 N Long. : 5°39'2 0 |               |             |            |                    |                          | 25                                | 16.27         | 36.81       | 27.03      | 5.59               |
|                          | sonde : 52 m                      |               |             |            |                    |                          | (30)                              | 15.78         | 37.02       | 27.31      | 5.52               |
| 16 VI                    |                                   |               |             |            |                    |                          | 50                                | 13.74         | 37.85       | 28.46      | 5.20               |
| 19h40                    | 5                                 | 15.62         | 36.20       | 26.78      | 5.85               |                          |                                   |               |             |            |                    |
|                          | 10                                | 15.55         | 36.34       | 26.90      | 5.66               | H <sub>3</sub>           | même position                     |               |             |            |                    |
|                          | (20)                              | 15.54         | 36.35       | 26.91      | 5.59               |                          | sonde : 61/62 m                   |               |             |            |                    |
|                          | 25                                | 15.53         | 36.35       | 26.92      | 5.56               | 18 VI                    |                                   |               |             |            |                    |
|                          | (30)                              | 15.52         | 36.33       | 26.91      | 5.55               | 02h15                    | 5                                 | 17.22         | 36.33       | 26.50      | 5.74               |
|                          | 50                                | 15.51         | 36.28       | 26.86      | 5.51               |                          | 10                                | 17.27         | 36.50       | 26.62      | 5.64               |
|                          |                                   |               |             |            |                    |                          | (20)                              | 17.31         | 36.53       | 26.63      | 5.65               |
| H <sub>2</sub>           | Lat. : 35°51'2 N Long. : 5°37'9 0 |               |             |            |                    |                          | 25                                | 17.33         | 36.54       | 26.64      | 5.66               |
|                          | sonde : 53 m                      |               |             |            |                    |                          | (30)                              | 16.74         | 36.70       | 26.90      | 5.57               |
| 17 VI                    |                                   |               |             |            |                    |                          | 40                                | 15.57         | 37.03       | 27.43      | 5.40               |
| 01h20                    | 5                                 | 15.75         | 36.36       | 26.87      | 5.59               |                          |                                   |               |             |            |                    |
|                          | 10                                | 15.76         | 36.18       | 26.73      | 5.59               | H <sub>4</sub>           | même position                     |               |             |            |                    |
|                          | (20)                              | 15.64         | 36.25       | 26.81      | 5.59               |                          | sonde : 64 m                      |               |             |            |                    |
|                          | 25                                | 15.59         | 36.29       | 26.85      | 5.59               | 18 VI                    |                                   |               |             |            |                    |
|                          | (30)                              | 15.56         | 36.33       | 26.88      | 5.57               | 05h05                    | 5                                 | 16.93         | 36.47       | 26.67      | 5.55               |
|                          | 50                                | 15.44         | 36.47       | 27.02      | 5.51               |                          | 10                                | 16.71         | 36.56       | 26.80      | 5.47               |



| Station<br>date<br>heure | Prof.<br>(m)      | Temp.<br>(°C)     | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L | Station<br>date<br>heure | Prof.<br>(m)      | Temp.<br>(°C)    | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L |
|--------------------------|-------------------|-------------------|-------------|------------|--------------------|--------------------------|-------------------|------------------|-------------|------------|--------------------|
| L 143                    |                   |                   |             |            |                    | L 164                    |                   |                  |             |            |                    |
| H <sub>4</sub> suite:    | (20)              | 16.11             | 36.53       | 26.84      | 5.55               | H <sub>2</sub> suite:    | 280               | 13.27            | 36.30       | 27.37      | 4.53               |
|                          | 25                | 16.26             | 36.51       | 26.86      | 5.59               |                          | (300)             | 13.35            | 36.70       | 27.70      | 4.52               |
|                          | (30)              | 16.14             | 36.59       | 26.95      | 5.53               |                          | 370               | 13.66            | 38.27       | 28.81      | 4.50               |
|                          | 50                | 15.67             | 36.91       | 27.30      | 5.32               |                          | (400)             | 13.48            | 38.30       | 28.87      | 4.50               |
|                          |                   |                   |             |            |                    |                          | 480               | 12.97            | 38.40       | 29.05      | 4.50               |
| L 164                    |                   |                   |             |            |                    |                          |                   |                  |             |            |                    |
|                          | (en dérive)       |                   |             |            |                    |                          |                   |                  |             |            |                    |
| H <sub>1</sub>           | Lat. : 35°57'15 N | Long. : 5°30'16 O |             |            |                    | H <sub>3</sub>           | Lat. : 35°56'4 N  | Long. : 5°30'6 O |             |            |                    |
|                          | sonde : 930 m     |                   |             |            |                    |                          | sonde : 780/840 m |                  |             |            |                    |
| 28 VI                    |                   |                   |             |            |                    | 29 VI                    |                   |                  |             |            |                    |
| 21h40                    | 5                 | 19.91             | 36.12       | 25.66      | 5.44               | 2h30                     | 5                 | 21.09            | 36.18       | 25.34      | 5.65               |
|                          | (10)              | 19.10             | 36.13       | 25.88      | 5.50               |                          | (10)              | 20.30            | 36.21       | 25.62      | 5.66               |
|                          | (20)              | 17.45             | 36.16       | 26.30      | 5.63               |                          | (20)              | 18.80            | 36.26       | 26.04      | 5.68               |
|                          | 25                | 16.61             | 36.18       | 26.53      | 5.70               |                          | 25                | 18.01            | 36.28       | 26.27      | 5.69               |
|                          | (30)              | 16.44             | 36.18       | 26.58      | 5.66               |                          | (30)              | 17.60            | 36.29       | 26.36      | 5.68               |
|                          | 50                | 15.70             | 36.20       | 26.76      | 5.48               |                          | 50                | 16.08            | 36.32       | 26.77      | 5.62               |
|                          | 75                | 15.29             | 36.20       | 26.85      | 5.24               |                          | 65                | 15.50            | 36.24       | 26.83      | 5.28               |
|                          | 100               | 15.16             | 36.15       | 26.84      | 5.19               |                          | (75)              | 15.23            | 36.22       | 26.87      | 5.23               |
|                          | 130               | 13.96             | 36.59       | 27.46      | 4.82               |                          | 80                | 15.16            | 36.21       | 26.89      | 5.21               |
|                          | 180               | 13.99             | 37.22       | 27.92      | 4.82               |                          | (100)             | 14.43            | 36.16       | 27.01      | 5.12               |
|                          | (200)             | 13.96             | 37.26       | 27.96      | 4.82               |                          | 105               | 14.24            | 36.14       | 27.04      | 5.10               |
|                          | 300               | 13.84             | 37.49       | 28.16      | 4.83               |                          | 150               | 13.55            | 36.56       | 27.51      | 4.91               |
|                          | (400)             | 13.73             | 37.72       | 28.36      | ?                  |                          | 200               | 14.28            | 36.14       | 27.03      | 4.91               |
|                          | 450               | 13.67             | 37.84       | 28.47      | ?                  |                          | (300)             | 13.92            | 36.70       | 27.54      | 4.87               |
|                          | 500               | 13.56             | 38.20       | 28.57      | 4.86               |                          | 360               | 13.71            | 37.05       | 27.85      | 4.84               |
|                          | (600)             | 13.26             | 38.29       | 28.80      | 4.64               |                          | (400)             | 13.62            | 37.24       | 28.02      | 4.78               |
|                          | 700               | 12.96             | 38.38       | 29.03      | 4.40               |                          | (500)             | 13.38            | 37.74       | 28.46      | 4.62               |
|                          |                   |                   |             |            |                    |                          | 600               | 13.15            | 38.24       | 28.89      | 4.47               |
| H <sub>2</sub>           | Lat. : 35°57'7 N  | Long. : 5°30'3 O  |             |            |                    | H <sub>4</sub>           | Lat. : 35°57'4 N  | Long. : 5°29'9 O |             |            |                    |
|                          | sonde : 800/950 m |                   |             |            |                    |                          | sonde : 940 m     |                  |             |            |                    |
| 29 VI                    |                   |                   |             |            |                    | 29 VI                    |                   |                  |             |            |                    |
| 0h15                     | 5                 | 18.25             | 36.18       | 26.13      | 5.63               | 05h30                    | 10                | 18.47            | 36.14       | 26.05      | ?                  |
|                          | (10)              | 18.14             | 36.20       | 26.18      | 5.61               |                          | (20)              | 16.70            | 36.17       | 26.50      | ?                  |
|                          | (20)              | 17.92             | 36.25       | 26.27      | 5.55               |                          | 25                | 15.79            | 36.18       | 26.72      | 5.48               |
|                          | 25                | 17.81             | 36.28       | 26.32      | 5.52               |                          | (30)              | 15.56            | 36.17       | 26.76      | 5.41               |
|                          | (30)              | 17.47             | 36.28       | 26.40      | 5.52               |                          | 50                | 14.63            | 36.11       | 26.93      | 5.12               |
|                          | 40                | 16.82             | 36.29       | 26.57      | 5.52               |                          | (75)              | 14.55            | ?           | ?          | ?                  |
|                          | (50)              | 16.54             | 36.28       | 26.63      | 5.56               |                          | (100)             | 14.48            | ?           | ?          | ?                  |
|                          | 70                | 16.01             | 36.26       | 26.73      | 5.63               |                          | 135               | 14.37            | ?           | ?          | ?                  |
|                          | (75)              | 15.90             | 36.27       | 26.76      | 5.59               |                          | 185               | 14.63            | ?           | ?          | ?                  |
|                          | 90                | 15.62             | 36.29       | 26.29      | 5.48               |                          | 190               | 14.27            | 36.48       | 27.29      | 4.89               |
|                          | (100)             | 15.15             | 36.31       | 26.96      | 5.45               |                          | (200)             | 14.25            | 36.50       | 27.31      | 4.89               |
|                          | 110               | 14.69             | 36.33       | 27.08      | 4.93               |                          | (300)             | 13.99            | 36.76       | 27.56      | 4.84               |
|                          | (200)             | 13.95             | 36.31       | 27.22      | 4.72               |                          | 330               | 13.89            | 36.84       | 27.66      | 4.83               |



| Station:<br>date<br>heure | Prof.<br>(m)                       | Temp.<br>(°C) | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L | Station:<br>date<br>heure | Prof.<br>(m)                      | Temp.<br>(°C) | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L |
|---------------------------|------------------------------------|---------------|-------------|------------|--------------------|---------------------------|-----------------------------------|---------------|-------------|------------|--------------------|
| L 164                     |                                    |               |             |            |                    | L 167                     |                                   |               |             |            |                    |
| H <sub>4</sub> suite:     | 400                                | 13.53         | 37.46       | 28.21      | 4.89               | H <sub>2</sub> suite:     | 470                               | 12.93         | 38.46       | 29.11      | 4.19               |
|                           | (500)                              | 13.45         | 37.70       | 28.40      | 4.93               |                           | (500)                             | 12.92         | 38.43       | 29.09      | 4.19               |
|                           | 600                                | 13.38         | 37.95       | 28.62      | 4.97               |                           | (600)                             | 12.90         | 38.34       | 29.03      | 4.20               |
|                           | (700)                              | 13.15         | 38.07       | 28.76      | 4.74               |                           | 620                               | 12.89         | 38.33       | 29.02      | 4.20               |
|                           | 760                                | 13.05         | 38.15       | 28.84      | 4.59               |                           |                                   |               |             |            |                    |
| L 167                     | (au mouillage)                     |               |             |            |                    | H <sub>3</sub>            | Lat. : 35°55'8 N Long. : 5°38'9 0 |               |             |            |                    |
|                           |                                    |               |             |            |                    |                           | sonde : 610/620 m                 |               |             |            |                    |
| H <sub>1</sub>            | Lat. : 35°55'7 N Long. : 5°38'1 0  |               |             |            |                    | 1 VII                     |                                   |               |             |            |                    |
|                           |                                    |               |             |            |                    | 4h50                      | 5                                 | 16.53         | 36.30       | 26.54      | 5.64               |
|                           |                                    |               |             |            |                    |                           | (10)                              | 16.54         | 36.25       | 26.52      | 5.63               |
|                           | Lat. : 35°55'45 N Long. : 5°38'8 0 |               |             |            |                    |                           | (20)                              | 16.58         | 36.14       | 26.47      | 5.61               |
|                           |                                    |               |             |            |                    |                           | 30                                | 16.60         | 36.03       | 26.42      | 5.60               |
|                           | sonde : 660/610 m                  |               |             |            |                    |                           | (50)                              | 15.42         | 36.07       | 26.71      | 5.47               |
| 30 VI                     |                                    |               |             |            |                    |                           | 55                                | 15.12         | 36.08       | 26.79      | 5.41               |
|                           | 5                                  | 16.97         | 36.27       | 26.51      | 5.64               |                           | (75)                              | 14.84         | 36.07       | 26.84      | 5.35               |
|                           | (10)                               | 16.66         | 36.28       | 26.60      | 5.56               |                           | 100                               | 14.50         | 36.06       | 26.91      | 5.26               |
|                           | (20)                               | 16.00         | 36.31       | 26.77      | 5.41               |                           | 200                               | 13.16         | 38.03       | 28.72      | 4.71               |
|                           | 25                                 | 15.69         | 36.32       | 26.85      | 5.32               |                           | 300                               | 12.98         | 38.23       | 28.93      | 4.34               |
|                           | (30)                               | 15.60         | 36.28       | 26.84      | 5.25               |                           | 400                               | 12.91         | 38.39       | 29.05      | 4.31               |
|                           | 50                                 | 15.23         | 36.13       | 26.81      | 4.96               |                           | 500                               | 12.91         | 38.40       | 29.06      | 4.24               |
|                           | 75                                 | 13.79         | 36.63       | 27.51      | 4.75               |                           | 580                               | 12.87         | 38.40       | 29.07      | 4.25               |
|                           | (100)                              | 13.31         | 37.58       | 28.35      | 4.57               |                           | (600)                             | 12.87         | 38.41       | 29.08      | 4.25               |
|                           | 120                                | 12.93         | 38.36       | 29.03      | 4.42               |                           | 660                               | 12.89         | 38.44       | 29.10      | 4.25               |
|                           | (200)                              | 12.90         | 38.35       | 29.03      | 4.39               |                           |                                   |               |             |            |                    |
|                           | 260                                | 12.89         | 38.34       | 29.03      | 4.36               |                           |                                   |               |             |            |                    |
|                           | (300)                              | 12.89         | 38.37       | 29.05      | 4.33               | L 168                     | (en dérive)                       |               |             |            |                    |
|                           | 370                                | 12.89         | 38.44       | 29.10      | 4.28               |                           |                                   |               |             |            |                    |
|                           | (400)                              | 12.89         | 38.43       | 29.09      | 4.29               | H <sub>1</sub>            | Lat. : 35°52'6 N Long. : 5°54'9 0 |               |             |            |                    |
|                           | (500)                              | 12.91         | 38.42       | 29.07      | 4.31               |                           | sonde : 480/460 m                 |               |             |            |                    |
|                           | 540                                | 12.92         | 38.41       | 29.07      | 4.32               | 1 VII                     |                                   |               |             |            |                    |
|                           |                                    |               |             |            |                    | 23h00                     | 5                                 | 15.28         | 36.14       | 26.81      | 5.26               |
| H <sub>2</sub>            | Lat. : 35°55'1 N Long. : 5°38'45 0 |               |             |            |                    |                           | (10)                              | 15.27         | 36.14       | 26.81      | 5.26               |
|                           |                                    |               |             |            |                    |                           | (20)                              | 15.26         | 36.13       | 26.81      | 5.25               |
|                           | sonde : 670/672 m                  |               |             |            |                    |                           | 25                                | 15.25         | 36.13       | 26.81      | 5.24               |
| 1 VII                     |                                    |               |             |            |                    |                           | (30)                              | 15.25         | 36.16       | 26.83      | 5.24               |
| 1h45                      | 5                                  | 17.20         | 36.09       | 26.32      | 5.57               |                           | 35                                | 15.25         | 36.19       | 26.85      | 5.23               |
|                           | (10)                               | 17.06         | 36.07       | 26.34      | 5.54               |                           | 50                                | 15.19         | 36.21       | 26.89      | 5.24               |
|                           | (20)                               | 16.82         | 36.04       | 26.37      | 5.49               |                           | (75)                              | 15.03         | 36.16       | 26.89      | 5.19               |
|                           | 25                                 | 16.69         | 36.02       | 26.39      | 5.46               |                           | (100)                             | 14.88         | 36.11       | 26.87      | 5.13               |
|                           | (30)                               | 16.58         | 36.07       | 26.46      | 5.46               |                           | 120                               | 14.76         | 36.07       | 26.87      | 5.09               |
|                           | 50                                 | 16.14         | 36.27       | 26.71      | 5.47               |                           | (200)                             | 13.40         | 37.38       | 28.18      | 4.56               |
|                           | 75                                 | 15.77         | 36.24       | 26.74      | 5.25               |                           | 210                               | 13.22         | 37.54       | 28.32      | 4.49               |
|                           | (100)                              | 14.71         | 36.75       | 27.35      | 5.06               |                           | 290                               | 13.08         | 38.15       | 28.83      | 4.37               |
|                           | 130                                | 13.68         | 37.35       | 28.09      | 4.83               |                           | (300)                             | 13.06         | 38.18       | 28.85      | 4.37               |
|                           | (200)                              | 13.17         | 38.02       | 28.71      | 4.45               |                           | 350                               | 13.00         | 38.31       | 28.98      | 4.36               |
|                           | 240                                | 12.88         | 38.41       | 29.08      | 4.22               |                           |                                   |               |             |            |                    |
|                           | (300)                              | 12.90         | 38.41       | 29.08      | 4.21               |                           |                                   |               |             |            |                    |
|                           | 340                                | 12.91         | 38.41       | 29.08      | 4.20               |                           |                                   |               |             |            |                    |
|                           | (400)                              | 12.92         | 38.43       | 29.09      | 4.20               |                           |                                   |               |             |            |                    |



| Station<br>date<br>heure | Prof.<br>(m)                        | Temp.<br>(°C) | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L | Station<br>date<br>heure | Prof.<br>(m)                          | Temp.<br>(°C) | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L |
|--------------------------|-------------------------------------|---------------|-------------|------------|--------------------|--------------------------|---------------------------------------|---------------|-------------|------------|--------------------|
| H <sub>2</sub>           | Lat. : 35°52'7 N Long. : 5°55'25 0  |               |             |            |                    | L 169                    | (en dérive)                           |               |             |            |                    |
|                          | sonde : 420/460 m                   |               |             |            |                    |                          |                                       |               |             |            |                    |
| 2 VII                    |                                     |               |             |            |                    | H <sub>1</sub>           | Lat. : 35°55'10 N Long. : 5°44'15 0   |               |             |            |                    |
| 2h30                     | 5                                   | 15.54         | 35.34       | 26.13      | 5.43               |                          | sonde : 280/320 m                     |               |             |            |                    |
|                          | (10)                                | 15.54         | 35.78       | 26.30      | 5.41               | 3 VII                    |                                       |               |             |            |                    |
|                          | (20)                                | 15.54         | 36.08       | 26.64      | 4.39               | 18h05                    | 5                                     | 16.11         | 36.29       | 26.73      | 5.19               |
|                          | 25                                  | 15.54         | 36.23       | 26.82      | 5.37               |                          | 10                                    | 16.07         | 36.35       | 26.78      | 5.07               |
|                          | (30)                                | 15.54         | 36.24       | 26.83      | 5.37               |                          | (20)                                  | 16.07         | 36.34       | 26.78      | 5.20               |
|                          | 50                                  | 15.52         | 36.27       | 26.85      | 5.55               |                          | 25                                    | 16.07         | 36.34       | 26.78      | 5.26               |
|                          | (75)                                | 15.39         | 36.11       | 26.75      | 5.29               |                          | (30)                                  | 15.82         | 36.29       | 26.80      | 5.17               |
|                          | 80                                  | 15.37         | 36.08       | 26.73      | 5.28               |                          | 40                                    | 15.32         | 36.18       | 26.83      | 4.99               |
|                          | (100)                               | 14.54         | 36.11       | 26.93      | 5.13               |                          | (50)                                  | 15.17         | 36.15       | 26.83      | 4.97               |
|                          | 130                                 | 13.31         | 36.15       | 27.24      | 4.91               |                          | 65                                    | 14.95         | 36.09       | 26.85      | 4.93               |
|                          | (200)                               | 13.08         | 37.41       | 28.32      | 4.76               |                          | (75)                                  | 14.78         | 36.07       | 26.87      | 4.87               |
|                          | 220                                 | 13.02         | 37.85       | 28.62      | 4.72               |                          | 90                                    | 14.51         | 36.05       | 26.90      | 4.79               |
|                          | (300)                               | 13.02         | 38.08       | 28.82      | 4.60               |                          | (100)                                 | 14.43         | 36.08       | 26.94      | 4.76               |
|                          | 340                                 | 13.02         | 38.24       | 28.92      | 4.54               |                          | 140                                   | 14.09         | 36.21       | 27.13      | 4.61               |
|                          |                                     |               |             |            |                    |                          | 170                                   | 13.40         | 36.54       | 27.54      | 4.54               |
| H <sub>3</sub>           | Lat. : 35°52'15 N Long. : 5°55'13 0 |               |             |            |                    |                          | (200)                                 | 13.21         | 37.68       | 28.44      | 4.28               |
|                          | sonde : 380/450 m                   |               |             |            |                    |                          | 210                                   | 13.14         | 38.04       | 28.74      | 4.19               |
| 2 VII                    |                                     |               |             |            |                    |                          |                                       |               |             |            |                    |
| 5h30                     | 5                                   | 15.76         | 36.05       | 26.63      | 5.68               | H <sub>2</sub>           | Lat. : 35°54'35 N Long. : 5°45'11 0   |               |             |            |                    |
|                          | (10)                                | 15.76         | 36.07       | 26.65      | 5.70               |                          | sonde : 290/240 m                     |               |             |            |                    |
|                          | (20)                                | 15.77         | 36.12       | 26.68      | 5.73               | 3 VII                    |                                       |               |             |            |                    |
|                          | 25                                  | 15.78         | 36.14       | 26.70      | 5.75               | 22h00                    | 5                                     | 14.82         | 36.18       | 26.94      | 5.05               |
|                          | (30)                                | 15.76         | 36.17       | 26.73      | 5.75               |                          | 10                                    | 14.74         | 36.13       | 26.92      | 5.01               |
|                          | 50                                  | 15.69         | 36.30       | 26.84      | 5.75               |                          | (20)                                  | 14.72         | 36.15       | 26.94      | 5.03               |
|                          | 75                                  | 15.31         | 35.82       | 26.55      | 5.64               |                          | 25                                    | 14.71         | 36.16       | 26.95      | 5.05               |
|                          | 90                                  | 14.60         | 36.04       | 26.87      | 5.09               |                          | (30)                                  | 14.68         | 36.16       | 26.96      | 5.05               |
|                          | (100)                               | 14.46         | 36.08       | 26.90      | 5.10               |                          | 50                                    | 14.57         | 36.18       | 26.99      | 5.05               |
|                          | 160                                 | 13.61         | 36.09       | 27.13      | 5.13               |                          | 75                                    | 14.49         | 36.25       | 27.06      | 5.06               |
|                          | (200)                               | 13.40         | 36.90       | 27.80      | 4.82               |                          | 100                                   | 14.32         | 36.34       | 27.17      | 5.03               |
|                          | 260                                 | 13.09         | 38.11       | 28.81      | 4.61               |                          | 150                                   | 13.45         | 37.29       | 28.09      | 4.68               |
|                          | (300)                               | 13.06         | 38.17       | 28.86      | 4.60               |                          | 190                                   | 13.08         | 38.12       | 28.81      | 4.58               |
|                          | 380                                 | 13.00         | 38.30       | 28.97      | 4.58               |                          | (200)                                 | 13.04         | 38.20       | 28.88      | 4.47               |
|                          |                                     |               |             |            |                    |                          | 230                                   | 12.91         | 38.43       | 29.09      | 4.14               |
| H <sub>4</sub>           | Lat. : 35°52'05 N Long. : 5°55'14 0 |               |             |            |                    |                          |                                       |               |             |            |                    |
|                          | sonde : 420/450 m                   |               |             |            |                    | H <sub>3</sub>           | Lat. : 35°54'195 N Long. : 5°43'195 0 |               |             |            |                    |
| 2 VII                    |                                     |               |             |            |                    |                          | sonde : 290/280 m                     |               |             |            |                    |
| 8h45                     | 5                                   | 15.08         | 36.17       | 26.87      | 5.31               | 4 VII                    |                                       |               |             |            |                    |
|                          | (10)                                | 15.07         | 36.17       | 26.87      | 5.33               | Oh10                     | 5                                     | 15.26         | 36.19       | 26.90      | 5.26               |
|                          | (20)                                | 15.06         | 36.17       | 26.88      | 5.36               |                          | 10                                    | 15.23         | 36.18       | 26.85      | 5.30               |
|                          | 25                                  | 15.06         | 36.17       | 26.88      | 5.38               |                          | (20)                                  | 15.16         | 36.19       | 26.87      | 5.23               |
|                          | (30)                                | 15.05         | 36.17       | 26.88      | 5.37               |                          | 25                                    | 15.12         | 36.19       | 26.88      | 5.19               |
|                          | 50                                  | 15.02         | 36.17       | 26.88      | 5.35               |                          | (30)                                  | 15.01         | 36.19       | 26.91      | 5.20               |
|                          | 75                                  | 15.10         | 36.17       | 26.87      | 5.38               |                          | 50                                    | 14.53         | 36.17       | 26.99      | 5.23               |
|                          | 100                                 | 15.04         | 36.12       | 26.84      | 5.38               |                          | 75                                    | 14.34         | 36.37       | 27.20      | 4.97               |
|                          | 170                                 | 13.50         | 35.96       | 27.05      | 4.94               |                          | 100                                   | 14.15         | 36.48       | 27.32      | 4.97               |
|                          | (200)                               | 13.36         | 36.66       | 27.62      | 4.81               |                          | 140                                   | 13.27         | 37.34       | 28.16      | 4.71               |
|                          | 260                                 | 13.07         | 38.08       | 28.78      | 4.54               |                          | 180                                   | 12.92         | 38.37       | 29.03      | 4.34               |
|                          | (300)                               | 13.05         | 38.12       | 28.82      | 4.53               |                          | (200)                                 | 12.92         | 38.40       | 29.06      | 4.26               |
|                          | 400                                 | 13.00         | 38.22       | 28.91      | 4.50               |                          | 225                                   | 12.92         | 38.43       | 29.09      | 4.19               |



| Station<br>date<br>heure | Prof.<br>(m)                       | Temp.<br>(°C) | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L | Station<br>date<br>heure | Prof.<br>(m)                       | Temp.<br>(°C) | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L |
|--------------------------|------------------------------------|---------------|-------------|------------|--------------------|--------------------------|------------------------------------|---------------|-------------|------------|--------------------|
| H <sub>4</sub>           | Lat. : 35°55'0 N Long. : 5°44'11 0 |               |             |            |                    | L 170                    |                                    |               |             |            |                    |
|                          | sonde : 300/340 m                  |               |             |            |                    |                          |                                    |               |             |            |                    |
| 4 VII                    |                                    |               |             |            |                    | H <sub>2</sub> suite:    | 50                                 | 13.46         | 36.49       | 27.47      | 4.74               |
| 3h30                     | 5                                  | 15.63         | 36.18       | 26.76      | 5.49               |                          | 75                                 | 13.62         | 37.20       | 27.99      | 4.70               |
|                          | 10                                 | 15.67         | 36.18       | 26.75      | 5.30               |                          | 90                                 | 13.42         | 37.70       | 28.23      | 4.70               |
|                          | (20)                               | 15.66         | 36.18       | 26.75      | 5.30               |                          | (100)                              | 13.33         | 37.81       | 28.41      | 4.60               |
|                          | 25                                 | 15.65         | 36.18       | 26.75      | 5.30               |                          | 130                                | 13.04         | 38.13       | 28.82      | 4.27               |
|                          | (30)                               | 15.64         | 36.18       | 26.75      | 5.30               |                          | 170                                | 12.98         | 38.12       | 28.83      | 4.19               |
|                          | 50                                 | 15.61         | 36.18       | 26.76      | 5.30               |                          | (200)                              | 12.97         | 38.18       | 28.88      | 4.19               |
|                          | 75                                 | 15.13         | 36.09       | 26.80      | 5.30               |                          | 240                                | 12.96         | 38.26       | 28.95      | 4.19               |
|                          | 100                                | 15.07         | 36.16       | 26.87      | 5.45               |                          | (300)                              | 12.94         | 38.23       | 28.94      | 4.16               |
|                          | 125                                | 13.84         | 35.98       | 27.00      | 4.82               |                          | 315                                | 12.93         | 38.22       | 28.93      | 4.15               |
|                          | 155                                | 13.98         | 36.31       | 27.22      | 4.93               |                          | 400                                | 12.93         | 38.33       | 29.01      | 4.11               |
|                          | (200)                              | 13.21         | 37.50       | 28.26      | 4.67               |                          |                                    |               |             |            |                    |
|                          | 225                                | 13.09         | 38.30       | 28.95      | 4.52               | H <sub>3</sub>           | Lat. : 35°54'85 N Long. : 5°40'9 0 |               |             |            |                    |
|                          |                                    |               |             |            |                    |                          | sonde : 600 m                      |               |             |            |                    |
| L 170                    | (en dérive)                        |               |             |            |                    | 5 VII                    |                                    |               |             |            |                    |
| H <sub>1</sub>           | Lat. : 35°55'3 N Long. : 5°40'8 0  |               |             |            |                    | 4h30                     | 5                                  | 15.40         | 36.20       | 26.83      | 5.21               |
|                          | sonde : 520/580 m                  |               |             |            |                    |                          | (10)                               | 15.36         | 36.19       | 26.83      | 5.21               |
| 4 VII                    |                                    |               |             |            |                    |                          | (20)                               | 15.31         | 36.19       | 26.84      | 5.21               |
| 22h45                    | 5                                  | 15.69         | 36.09       | 26.68      | 5.60               |                          | 25                                 | 15.28         | 36.18       | 26.84      | 5.21               |
|                          | (10)                               | 15.65         | ?           | ?          | ?                  |                          | (30)                               | 15.25         | 36.18       | 26.84      | 5.18               |
|                          | (20)                               | 15.56         | ?           | ?          | ?                  |                          | 50                                 | 15.13         | 36.16       | 26.85      | 5.09               |
|                          | 25                                 | 15.52         | manque      | ?          | manque             |                          | 75                                 | 14.55         | 36.16       | 26.98      | 4.93               |
|                          | (30)                               | 15.19         | ?           | ?          | ?                  |                          | 100                                | 14.16         | 36.14       | 27.05      | 4.86               |
|                          | 40                                 | 14.51         | 36.00       | 26.87      | 4.97               |                          | 130                                | 13.63         | 37.10       | 27.97      | 4.66               |
|                          | (50)                               | 14.02         | 36.26       | 27.18      | 4.83               |                          | 180                                | 13.32         | 37.68       | 28.42      | 4.54               |
|                          | 65                                 | 13.24         | 36.67       | 27.65      | 4.86               |                          | (200)                              | 13.24         | 37.86       | 28.59      | 4.42               |
|                          | (75)                               | 13.34         | 36.75       | 27.78      | 4.81               |                          | 250                                | 12.95         | 38.35       | 29.02      | 4.15               |
|                          | 90                                 | 13.49         | 37.12       | 27.95      | 4.72               |                          | (300)                              | 12.92         | 38.37       | 29.04      | 4.15               |
|                          | (100)                              | 13.44         | 37.36       | 28.15      | 4.71               |                          | 340                                | 12.89         | 38.39       | 29.06      | 4.15               |
|                          | 120                                | 13.35         | 37.84       | 28.54      | 4.67               |                          | (400)                              | 12.92         | 38.32       | 29.00      | 4.15               |
|                          | 170                                | 13.05         | 38.17       | 28.85      | 4.37               |                          | 440                                | 12.94         | 38.27       | 28.96      | 4.15               |
|                          | (200)                              | 13.00         | 38.26       | 28.92      | 4.29               | L 171                    | (au mouillage)                     |               |             |            |                    |
|                          | 210                                | 12.98         | 38.29       | 28.95      | 4.26               |                          |                                    |               |             |            |                    |
|                          | 270                                | 12.94         | 38.30       | 28.98      | 4.26               | H <sub>1</sub>           | Lat. : 35°53'6 N Long. : 5°49'4 0  |               |             |            |                    |
|                          | (300)                              | 12.94         | 38.30       | 28.98      | 4.24               |                          | sonde : 464/480 m                  |               |             |            |                    |
|                          | 400                                | 12.93         | 38.31       | 28.99      | 4.19               | 5 VII                    |                                    |               |             |            |                    |
| H <sub>2</sub>           | Lat. : 35°55'25 N Long. : 5°40'5 0 |               |             |            |                    | 22h15                    | 5                                  | 15.30         | 36.27       | 26.90      | 5.17               |
|                          | sonde : 600 m                      |               |             |            |                    |                          | (10)                               | 15.28         | 36.24       | 26.88      | 5.17               |
| 5 VII                    |                                    |               |             |            |                    |                          | (20)                               | 15.25         | 36.17       | 26.84      | 5.17               |
| 1h45                     | 5                                  | 15.79         | 36.01       | 26.60      | 5.33               |                          | 25                                 | 15.23         | 36.14       | 26.82      | 5.17               |
|                          | (10)                               | 15.59         | 36.04       | 26.63      | 5.23               |                          | (30)                               | 15.22         | 36.14       | 26.82      | 5.15               |
|                          | (20)                               | 15.20         | 36.10       | 26.78      | 5.09               |                          | 50                                 | 15.20         | 36.14       | 26.83      | 5.05               |
|                          | 25                                 | 15.01         | 36.13       | 26.86      | 5.01               |                          | 75                                 | 15.25         | 36.15       | 26.81      | 5.05               |
|                          | (30)                               | 14.70         | 36.20       | 26.92      | 4.96               |                          | 100                                | 15.30         | 36.28       | 26.91      | 5.05               |
|                          |                                    |               |             |            |                    |                          | 120                                | 14.84         | 36.14       | 26.90      | 4.90               |



| Station<br>date<br>heure | Prof.<br>(m)                        | Temp.<br>(°C) | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L | Station<br>date<br>heure | Prof.<br>(m)                        | Temp.<br>(°C) | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L |
|--------------------------|-------------------------------------|---------------|-------------|------------|--------------------|--------------------------|-------------------------------------|---------------|-------------|------------|--------------------|
| L 171                    |                                     |               |             |            |                    | L 195                    |                                     |               |             |            |                    |
| H <sub>1</sub> suite:    | 170                                 | 14.63         | 36.16       | 26.96      | 4.74               | H <sub>1</sub> suite:    | (20)                                | 20.10         | 36.38       | 25.80      | 5.22               |
|                          | (200)                               | 14.55         | 36.22       | 27.03      | 4.74               |                          | 30                                  | 20.05         | 36.39       | 25.83      | 5.24               |
|                          | 240                                 | 14.45         | 36.30       | 27.12      | 4.74               |                          | (50)                                | 17.55         | 36.35       | 26.40      | 5.15               |
|                          | (300)                               | 13.58         | 37.50       | 28.24      | 4.44               |                          | 75                                  | 14.41         | 36.31       | 27.12      | 4.82               |
|                          | 320                                 | 13.29         | 37.92       | 28.61      | 4.35               |                          | 100                                 | 13.28         | 37.83       | 28.54      | 4.42               |
|                          | 380                                 | 13.16         | 38.05       | 28.74      | 4.19               |                          |                                     |               |             |            |                    |
| H <sub>2</sub>           | Lat. : 35°53'17 N Long. : 5°49'95 O |               |             |            |                    | H <sub>2</sub>           | Lat. : 35°52'15 N Long. : 5°40'13 O |               |             |            |                    |
|                          | sonde : 440/448 m                   |               |             |            |                    |                          | sonde : 130 m                       |               |             |            |                    |
| :5 VII                   |                                     |               |             |            |                    | :16 VII                  |                                     |               |             |            |                    |
| :01h30                   | 5                                   | 15.12         | 36.20       | 26.89      | 5.13               | :06h45                   | 5                                   | 19.05         | 36.30       | 26.02      | 5.28               |
|                          | 20                                  | 15.00         | 36.18       | 26.90      | 4.90               |                          | (10)                                | 18.75         | 36.22       | 26.04      | 5.24               |
|                          | 50                                  | 14.71         | 36.20       | 26.98      | 4.93               |                          | (20)                                | 18.10         | 36.06       | 26.07      | 5.14               |
|                          | 75                                  | 14.61         | 36.15       | 26.96      | 4.86               |                          | 25                                  | 17.82         | 35.98       | 26.09      | 5.09               |
|                          | 100                                 | 14.70         | 36.33       | 27.08      | 4.93               |                          | (30)                                | 17.30         | 36.10       | 26.28      | 5.03               |
|                          | 150                                 | 14.77         | 36.46       | 27.17      | 4.93               |                          | (50)                                | 15.60         | 36.60       | 26.68      | 4.78               |
|                          | (200)                               | 14.30         | 36.92       | 27.62      | 4.68               |                          | 70                                  | 13.80         | 37.09       | 27.86      | 4.53               |
|                          | 250                                 | ?             | 37.38       | ?          | 4.42               |                          | (75)                                | 13.70         | 37.13       | 27.99      | 4.51               |
|                          | (300)                               | 13.38         | 37.84       | 28.50      | 4.40               |                          | 90                                  | 13.51         | 37.65       | 28.35      | 4.47               |
|                          | 320                                 | 13.29         | 38.02       | 28.69      | 4.39               | L 196                    | (au mouillage)                      |               |             |            |                    |
|                          | 390                                 | 13.20         | 38.37       | 28.98      | 4.39               |                          |                                     |               |             |            |                    |
| H <sub>3</sub>           | Lat. : 35°53'16 N Long. : 5°49'25 O |               |             |            |                    | H <sub>1</sub>           | Lat. : 35°58'17 N Long. : 5°40'14 O |               |             |            |                    |
|                          | sonde : 380/400 m                   |               |             |            |                    |                          | sonde : 258/312 m                   |               |             |            |                    |
| :6 VII                   |                                     |               |             |            |                    | :16 VII                  |                                     |               |             |            |                    |
| :1/ 4h30:2/              | 5                                   | 15.24         | 36.18       | 26.84      | 5.18               | :18h30                   | 5                                   | 21.18         | 36.39       | 25.52      | 5.21               |
| :2/ 5h10:                | (10)                                | 15.27         | 36.18       | 26.83      | 5.17               |                          | (10)                                | 20.85         | 36.40       | 25.72      | 5.15               |
|                          | (20)                                | 15.32         | 36.18       | 26.81      | 5.16               |                          | (20)                                | 20.10         | 36.44       | 26.14      | 5.05               |
|                          | 25                                  | 15.34         | 36.18       | 26.82      | 5.16               |                          | (30)                                | 19.30         | 36.46       | 26.54      | 4.94               |
|                          | (30)                                | 15.33         | 36.15       | 26.80      | 5.16               |                          | 50                                  | 14.00         | 36.82       | 27.38      | 4.72               |
|                          | 50                                  | 15.24         | 36.00       | 26.71      | 5.16               |                          | (75)                                | 13.66         | 37.28       | 28.04      | 4.60               |
|                          | 75                                  | 15.24         | 36.03       | 26.73      | 5.12               |                          | 100                                 | 13.31         | 38.03       | 28.69      | 4.49               |
|                          | (100)                               | 15.22         | 36.01       | 26.72      | 5.10               |                          | 200                                 | 13.10         | 38.29       | 28.94      | 4.42               |
|                          | 120                                 | 15.21         | 36.00       | 26.72      | 5.08               | L 215                    | (au mouillage)                      |               |             |            |                    |
|                          | 150                                 | 15.03         | 36.01       | 26.77      | 4.93               |                          |                                     |               |             |            |                    |
|                          | 190                                 | 14.83         | 36.00       | 26.80      | 4.92               | H <sub>1</sub>           | Lat. : 35°44'17 N Long. : 6°01' 0   |               |             |            |                    |
|                          | (200)                               | 14.76         | 36.04       | 26.88      | 4.86               |                          | sonde : 81 m                        |               |             |            |                    |
|                          | 240                                 | ?             | 36.19       | ?          | 4.63               | :23 VII                  |                                     |               |             |            |                    |
|                          | 285                                 | 14.10         | 36.85       | 27.61      | 4.71               | :20h45                   | 5                                   | 21.56         | 36.37       | 25.41      | 5.37               |
|                          | (300)                               | 13.82?        | 37.20?      | 27.92?     | 4.64?              |                          | (10)                                | 21.16         | 36.36       | 25.52      | 5.36               |
|                          | 1/310                               | 13.62         | 37.45       | 28.17      | 4.59               |                          | (20)                                | 20.30         | 36.35       | 25.75      | 5.35               |
|                          |                                     |               |             |            |                    |                          | 25                                  | 19.85         | 36.35       | 25.86      | 5.34               |
| L 195                    | (au mouillage)                      |               |             |            |                    |                          | (30)                                | 19.70         | 36.32       | 25.88      | 5.33               |
|                          |                                     |               |             |            |                    |                          | 50                                  | 19.06         | 36.23       | 25.96      | 5.32               |
| H <sub>1</sub>           | Lat. : 35°52'15 N Long. : 5°40'13 O |               |             |            |                    |                          | 75                                  | 15.61         | 36.03       | 26.65      | 5.30               |
|                          | sonde : 130 m                       |               |             |            |                    |                          |                                     |               |             |            |                    |
| :15 VII                  |                                     |               |             |            |                    |                          |                                     |               |             |            |                    |
| :22h30                   | 5                                   | 20.23         | 36.37       | 25.77      | 5.20               |                          |                                     |               |             |            |                    |
|                          | (10)                                | 20.20         | 36.37       | 25.78      | 5.21               |                          |                                     |               |             |            |                    |



| Station :       | Prof. :                             | Temp. : | Salin. : | $\sigma_t$ : | $\sigma^2$ : | Station : | Prof. :                             | Temp. : | Salin. : | $\sigma_t$ : | $\sigma^2$ : |
|-----------------|-------------------------------------|---------|----------|--------------|--------------|-----------|-------------------------------------|---------|----------|--------------|--------------|
| date :          | (m) :                               | (°C) :  | ‰ :      | :            | cc/L :       | date :    | (m) :                               | (°C) :  | ‰ :      | :            | cc/L :       |
| heure :         | :                                   | :       | :        | :            | :            | heure :   | :                                   | :       | :        | :            | :            |
|                 |                                     |         |          |              |              |           |                                     |         |          |              |              |
| :H <sub>2</sub> | Lat. 35°44'17 N Long. : 6°01' 0     |         |          |              |              | : L 226   | (suite)                             |         |          |              |              |
| :               | sonde : 80 m                        |         |          |              |              | :         |                                     |         |          |              |              |
| :24 VII         |                                     |         |          |              |              | :         |                                     |         |          |              |              |
| :05h50          | 5                                   | 21.51   | 36.32    | 25.38        | 5.32         | :         | 80                                  | 16.22   | 36.22    | 26.75        | 5.41         |
| :               | (10)                                | 21.38   | 36.27    | 25.38        | 5.32         | :         | (100)                               | 15.99   | 36.33    | 26.81        | 5.29         |
| :               | (20)                                | 21.12   | 36.18    | 25.38        | 5.32         | :         | 130                                 | 15.55   | 36.36    | 26.92        | 5.12         |
| :               | 25                                  | 21.00   | 36.14    | 25.38        | 5.32         | :         | 170                                 | 15.09   | 36.21    | 26.91        | 5.08         |
| :               | (30)                                | 18.60   | 36.15    | 25.60        | 5.31         | :         | (200)                               | 14.72   | 36.16    | 26.98        | 4.91         |
| :               | 50                                  | 17.00   | 36.18    | 26.44        | 5.29         | :         | 230                                 | 14.15   | 36.12    | 27.04        | 4.74         |
| :               | 75                                  | 15.23   | 35.89    | 26.62        | 5.30         | :         | (300)                               | 13.28   | 36.13    | 27.22        | 4.71         |
| :               |                                     |         |          |              |              | :         | 310                                 | 13.16   | 36.14    | 27.26        | 4.70         |
| :               |                                     |         |          |              |              | :         | 350                                 | 13.19   | 38.19    | 28.84        | 4.68         |
| :               | (en dérive)                         |         |          |              |              | :         |                                     |         |          |              |              |
| :L 218          |                                     |         |          |              |              | : L 227   | (en dérive)                         |         |          |              |              |
| :               |                                     |         |          |              |              | :         |                                     |         |          |              |              |
| :H <sub>1</sub> | Lat. : 36°01'13 N Long. : 6°16'11 0 |         |          |              |              | :         | Lat. : 35°57'12 N Long. : 5°54'18 0 |         |          |              |              |
| :               | sonde : 86 m                        |         |          |              |              | :         | sonde : 272 m                       |         |          |              |              |
| :24 VII         |                                     |         |          |              |              | :26 VII   |                                     |         |          |              |              |
| :19h00          | 5                                   | 22.85   | 36.24    | 24.93        | 5.08         | :19h27    | 5                                   | 21.84   | 36.27    | 25.25        | 5.08         |
| :               | (10)                                | 22.00   | 36.21    | 25.15        | 5.09         | :         | (10)                                | 21.75   | 36.29    | 25.29        | 5.08         |
| :               | (20)                                | 20.20   | 36.15    | 25.60        | 5.21         | :         | 20                                  | 21.53   | 36.33    | 25.38        | 5.08         |
| :               | 23                                  | 19.77   | 36.14    | 25.71        | 5.23         | :         | (30)                                | 19.95   | 36.20    | 25.70        | 5.32         |
| :               | (30)                                | 19.55   | 36.14    | 25.84        | 5.39         | :         | 40                                  | 18.39   | 36.05    | 26.00        | 5.56         |
| :               | 45                                  | 19.13   | 36.14    | 25.88        | 5.41         | :         | (50)                                | 17.20   | 36.08    | 26.30        | 5.61         |
| :               | (50)                                | 18.10   | 36.11    | 26.10        | 5.31         | :         | 60                                  | 16.04   | 36.11    | 26.61        | 5.65         |
| :               | 70                                  | 14.13   | 36.09    | 27.02        | 4.94         | :         | 75                                  | 15.23   | 36.08    | 26.76        | 5.10         |
| :               |                                     |         |          |              |              | :         | (100)                               | 14.80   | 36.14    | 26.91        | 4.93         |
| :H <sub>2</sub> | Lat. : 36°01'13 N long. : 6°16'11 0 |         |          |              |              | :         | 115                                 | 14.53   | 36.18    | 27.00        | 4.80         |
| :               | sonde : 92 m                        |         |          |              |              | :         | 150                                 | 13.49   | 37.34    | 28.12        | 4.46         |
| :25 VII         |                                     |         |          |              |              | :         | 200                                 | 13.11   | 38.12    | 28.80        | 4.28         |
| :06h30          | 5                                   | 19.79   | 36.14    | 25.71        | 5.16         | :         | 250                                 | 13.17   | 38.12    | 28.79        | 4.12         |
| :               | (10)                                | 19.90   | 36.14    | 25.68        | 5.16         | :         |                                     |         |          |              |              |
| :               | (20)                                | 20.10   | 36.14    | 25.62        | 5.16         | : L 228   | (en dérive)                         |         |          |              |              |
| :               | 25                                  | 20.23   | 36.14    | 25.59        | 5.16         | :         |                                     |         |          |              |              |
| :               | (30)                                | 19.20   | 36.09    | 25.87        | 5.09         | :         | Lat. : 35°58'19 N Long. : 5°18'13 0 |         |          |              |              |
| :               | 45                                  | 15.01   | 35.94    | 26.71        | 4.87         | :         | sonde : 870 m                       |         |          |              |              |
| :               | (50)                                | 14.80   | 35.96    | 26.78        | 4.86         | :27 VII   |                                     |         |          |              |              |
| :               | 75                                  | 13.71   | 36.07    | 27.09        | 4.83         | :02h20    | 5                                   | 17.00   | 36.27    | 26.50        | 5.45         |
| :               |                                     |         |          |              |              | :         | (10)                                | 16.96   | 36.28    | 26.53        | 5.42         |
| :L 226          | (en dérive)                         |         |          |              |              | :         | (20)                                | 16.87   | 36.31    | 26.60        | 5.37         |
| :               |                                     |         |          |              |              | :         | 24                                  | 16.68   | 36.32    | 26.62        | 5.35         |
| :               | Lat. 35°49'12 N Long. : 6°07'10 0   |         |          |              |              | :         | (30)                                | 16.52   | 36.29    | 26.65        | 5.32         |
| :               | sonde : 365 m                       |         |          |              |              | :         | 40                                  | 16.09   | 36.23    | 26.69        | 5.27         |
| :26 VII         |                                     |         |          |              |              | :         | (50)                                | 16.24   | 36.19    | 26.62        | 5.22         |
| :16h22          | 5                                   | 22.30   | 36.46    | 25.27        | 5.01         | :         | 60                                  | 16.39   | 36.14    | 26.56        | 5.18         |
| :               | (10)                                | 22.29   | 36.43    | 25.25        | 5.03         | :         | 75                                  | 16.06   | 36.27    | 26.73        | 5.23         |
| :               | (20)                                | 22.29   | 36.37    | 25.20        | 5.06         | :         | (100)                               | 16.55   | 36.37    | 26.92        | 5.11         |
| :               | 25                                  | 22.28   | 36.34    | 25.18        | 5.08         | :         | 150                                 | 14.53   | 36.58    | 27.31        | 4.87         |
| :               | (30)                                | 21.00   | 36.30    | 25.48        | 5.32         | :         | (200)                               | 13.94   | 37.20    | 27.92        | 4.67         |
| :               | 40                                  | 18.46   | 36.22    | 26.11        | 5.80         | :         | 250                                 | 13.37   | 37.85    | 28.54        | 4.54         |
| :               | (50)                                | 17.50   | 36.29    | 26.10        | 5.66         | :         | (300)                               | 13.32   | 37.90    | 28.58        | 4.52         |
| :               | 60                                  | 16.52   | 36.36    | 26.69        | 5.52         | :         |                                     |         |          |              |              |
| :               | 75                                  | 16.30   | 36.34    | 26.72        | 5.44         | :         |                                     |         |          |              |              |







| Station<br>date<br>heure | Prof.<br>(m)                        | Temp.<br>(°C) | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L | Station<br>date<br>heure | Prof.<br>(m)                        | Temp.<br>(°C) | Salin.<br>‰ | $\sigma_t$ | $\sigma^2$<br>cc/L |
|--------------------------|-------------------------------------|---------------|-------------|------------|--------------------|--------------------------|-------------------------------------|---------------|-------------|------------|--------------------|
| M 110                    |                                     |               |             |            |                    | M 110                    |                                     |               |             |            |                    |
| H <sub>1</sub> suite:    | 16                                  | 16°01         | 36.27       | 26.74      | 5.34               | H <sub>3</sub> suite:    | 55                                  | 15°95         | 36.44       | 26.89      | 5.28               |
|                          | (20)                                | 16°01         | 36.23       | 26.71      | 5.35               |                          | 71                                  | 16°00         | 36.38       | 26.83      | 5.31               |
|                          | (25)                                | 16°01         | 36.18       | 26.68      | 5.38               |                          | (75)                                | 16°00         | 36.38       | 26.82      | 5.31               |
|                          | (30)                                | 16°01         | 36.14       | 26.14      | 5.40               |                          | (100)                               | 15°99         | 36.39       | 26.79      | 5.30               |
|                          | 39                                  | 16°01         | 36.06       | 26.58      | 5.45               |                          | 115                                 | 15°98         | 36.40       | 26.77      | 5.30               |
|                          | (50)                                | 15°99         | 36.17       | 26.66      | 5.13               |                          | 175                                 | 15°97         | 36.31       | 26.77      | 5.38               |
|                          | 54                                  | 15°99         | 36.22       | 26.70      | 5.02               |                          | (200)                               | 15°84         | 36.38       | 26.86      | 5.38               |
|                          | (75)                                | 16°02         | 36.26       | 26.74      | 5.36               |                          | 250                                 | 15°58         | 36.54       | 27.05      | 5.39               |
|                          | 76                                  | 16°02         | 36.26       | 26.74      | 5.38               |                          |                                     |               |             |            |                    |
|                          | (100)                               | 16°02         | 36.28       | 26.75      | 5.34               | H <sub>4</sub>           | Lat. : 35°51'11 N Long. : 5°59'12 O |               |             |            |                    |
|                          | 146                                 | 16°03         | 36.32       | 26.77      | 5.27               |                          | sonde : 364 m                       |               |             |            |                    |
|                          | (200)                               | 15°74         | 36.36       | 26.87      | 5.23               | 23 II                    |                                     |               |             |            |                    |
|                          | 226                                 | 15°60         | 36.39       | 26.93      | 5.22               | 13h05                    | 4                                   | 15°88         | 36.02       | 26.58      | 5.35               |
|                          | 267                                 | 14°59         | 37.49       | 28.00      | 4.54               |                          | (5)                                 | 15°88         | 36.02       | 26.58      | 5.35               |
|                          |                                     |               |             |            |                    |                          | (10)                                | 15°85         | 36.01       | 26.57      | 5.35               |
| H <sub>2</sub>           | Lat. : 35°50'18 N Long. : 5°59'13 O |               |             |            |                    |                          | 19                                  | 15°81         | 35.99       | 26.56      | 5.34               |
|                          | sonde : 355 m                       |               |             |            |                    |                          | (20)                                | 15°81         | 35.99       | 26.57      | 5.34               |
| 23 II                    |                                     |               |             |            |                    |                          | (25)                                | 15°84         | 36.09       | 26.63      | 5.35               |
| 07h00                    | 4                                   | 15°96         | 36.35       | 26.81      | 5.35               |                          | (30)                                | 15°86         | 36.17       | 26.69      | 5.36               |
|                          | (5)                                 | 15°96         | 36.34       | 26.81      | 5.35               |                          | 35                                  | 15°89         | 36.26       | 26.76      | 5.37               |
|                          | (10)                                | 15°96         | 36.30       | 26.77      | 5.35               |                          | (50)                                | 15°94         | 36.32       | 26.80      | 5.32               |
|                          | 20                                  | 15°95         | 36.21       | 26.71      | 5.35               |                          | 55                                  | 15°96         | 36.34       | 26.81      | 5.30               |
|                          | (25)                                | 15°95         | 36.19       | 26.69      | 5.29               |                          | 70                                  | 16°08         | 36.13       | 26.62      | 5.34               |
|                          | (30)                                | 15°95         | 36.17       | 26.68      | 5.24               |                          | (75)                                | 16°08         | 36.16       | 26.64      | 5.33               |
|                          | 40                                  | 15°96         | 36.14       | 26.65      | 5.13               |                          | (100)                               | 16°07         | 36.28       | 26.74      | 5.34               |
|                          | (50)                                | 15°95         | 36.17       | 26.67      | 5.14               |                          | 115                                 | 16°07         | 36.37       | 26.81      | 5.34               |
|                          | 60                                  | 15°95         | 36.20       | 26.70      | 5.15               |                          | 190                                 | 15°16         | 36.80       | 27.11      | 5.30               |
|                          | (75)                                | 15°97         | 36.21       | 26.71      | 5.13               |                          | (200)                               | 15°08         | 36.87       | 27.21      | 5.26               |
|                          | 80                                  | 15°98         | 36.21       | 26.71      | 5.13               |                          | 270                                 | 14°49         | 37.38       | 27.93      | 4.98               |
|                          | (100)                               | 15°97         | 36.21       | 26.71      | 5.15               |                          |                                     |               |             |            |                    |
|                          | 163                                 | 15°95         | 36.20       | 26.70      | 5.23               |                          |                                     |               |             |            |                    |
|                          | (200)                               | 15°89         | 36.23       | 26.74      | 5.22               |                          |                                     |               |             |            |                    |
|                          | 256                                 | 15°81         | 36.29       | 26.80      | 5.20               |                          |                                     |               |             |            |                    |
|                          | (300)                               | 15°00         | 36.75       | 27.33      | 4.99               |                          |                                     |               |             |            |                    |
|                          | 303                                 | 14°94         | 36.78       | 27.37      | 4.98               |                          |                                     |               |             |            |                    |
|                          |                                     |               |             |            |                    |                          |                                     |               |             |            |                    |
| H <sub>3</sub>           | Lat. : 35°51'11 N Long. : 5°59'10 O |               |             |            |                    |                          |                                     |               |             |            |                    |
|                          | sonde : 354 m                       |               |             |            |                    |                          |                                     |               |             |            |                    |
| 23 II                    |                                     |               |             |            |                    |                          |                                     |               |             |            |                    |
| 10h10                    | 4                                   | 15°55         | 35.57       | 26.31      | 5.50               |                          |                                     |               |             |            |                    |
|                          | (5)                                 | 15°56         | 35.60       | 26.32      | 5.50               |                          |                                     |               |             |            |                    |
|                          | (10)                                | 15°67         | 35.76       | 26.42      | 5.47               |                          |                                     |               |             |            |                    |
|                          | 20                                  | 15°88         | 36.09       | 26.63      | 5.41               |                          |                                     |               |             |            |                    |
|                          | (25)                                | 15°90         | 36.13       | 26.65      | 5.36               |                          |                                     |               |             |            |                    |
|                          | (30)                                | 15°91         | 36.16       | 26.68      | 5.32               |                          |                                     |               |             |            |                    |
|                          | 37                                  | 15°94         | 36.21       | 26.72      | 5.25               |                          |                                     |               |             |            |                    |
|                          | (50)                                | 15°95         | 36.37       | 26.84      | 5.27               |                          |                                     |               |             |            |                    |





